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DEPARTMENT OF THE ARMY

U.S. ARMY CORPS OF ENGINEERS

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DEPARTMENT OF THE ARMY

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
167 NORTH MAIN STREET
MEMPHIS, TN 38103-1894

PROJECT TITLE:

CAIRO SLOPE FLATTENING

LOCATION:

ALEXANDER COUNTY, ILLINOIS

CONSTRUCTION SOLICITATION AND SPECIFICATIONS:

[THIS IS AN UNRESTRICTED SOLICITATION][THIS PROJECT IS LIMITED TO 8(A) ELIGIBLES IN THE FOLLOWING STATES: ARKANSAS, ILLINOIS, KENTUCKY, MISSISSIPPI, MISSOURI, AND TENNESSEE][THIS SOLICITATION IS A TOTAL HUBZone SMALL BUSINESS SET-ASIDE][THIS IS AN UNRESTRICTED SOLICITAION WITH HUBZone PRICE EVALUATION PREFERENCE (SEE Section 00 70 00.00 11 CONTRACT CLAUSES, CLAUSE 52.219-4)]

DATE: AUGUST 2014

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INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS

11/25/08

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SECTION 00 10 00.00 11

INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS
11/25/08

PART 1 General Information

1 DRAWINGS/SPECIFICATIONS

There will be specifications and drawings (22 sheets in set.)

2 PROGRAM DATA

AUTHORITY: The work provided for herein is authorized by the Flood Control Act approved 15 JUN 1936, as amended.

APPROPRIATION: 96X3112 - Flood Control, Mississippi River and Tributaries

ALLOTMENT: MRL - Construction

ESTIMATED VALUE: The estimated value of the proposed work is between $1,000,000 and $5,000,000.

3 SITE VISIT (CONSTRUCTION) (ALTERNATE I) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, bidders are urged and expected to inspect the site where the work will be performed.

(b) Two site visits will be scheduled. Perspective viewers must contact the Caruthersville Area Office at the number below for show dates, times and meeting place.

(c) Bidders desiring a site visit shall contact:

NAME: Mr. Jack Ratliff, Area Contracting Officer
ADDRESS: Caruthersville, MO Area Office
706 Harry S. Truman Boulevard
Caruthersville, Missouri 63830-1268

TELEPHONE: (573) 333-1043

COLLECT TELEPHONE CALls WILL NOT BE ACCEPTED.

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BIDDING SCHEDULE

2/20/13

DOCUMENT 00 41 00.00 11

BIDDING SCHEDULE
2/20/13

PART 1 BIDDING SCHEDULE

Cairo Slope Flatting
Embankment Placement
Alexander County, IL

1.1 LINE ITEMS

This contract will be awarded as one JOB with unit prices required for specifically selected work. A schedule of the unit price work is contained in Standard Form SF 1442, "Solicitation, Offer and Award." See Contract Clauses, "FAR 52.211-18, Variation in Estimated Quantity" and "FAR 52.236-16, Quantity Surveys," "DFARS 52.236-7008, Contract Prices."

Bid Items with Unit Prices Form

ITEM	DESCRIPTION	Estimated Quantity	Unit	Unit Price	Amount
0001	Mobilization and Demobilization	1	JA	XXX.XX	$____.__
0002	Environmental Protection	1	JA	XXX.XX	$____.__
0003	Silt Fence or Equivalent	22,250	LF	_____	$____.__
0004	Construction Entrance/Exit	1	EA	_____	$____.__
0005	Clearing and Grubbing	11.00	AC	_____	$____.__
0006	Establishment of Turf	90	AC	_____	$____.__
0007	Semi-compacted Embankment	237,400	CY	_____	$____.__
0008	Aggregate Surface Course (4 inch thickness)	2,600	CCY	_____	$____.__
0009	Aggregate Surface Course (6 inch thickness)	8,000	CCY	_____	$____.__
0010	Geotextile	21,500	SY	_____	$____.__

Grand Total Items 0001 thru 0010 $_____.__

1.2 NOTES

NOTE 1: Bidders shall furnish unit prices for all items listed on the schedule of bid items, which require unit prices. If the bidder fails to insert a unit price in the appropriate blank for required items, but does furnish an extended total or an estimated amount for such items, the

Government will deem his unit price to be the quotient obtained by dividing the extended estimated amount for that line item by the quantity. IF THE BIDDER OMITS BOTH THE UNIT PRICE AND THE EXTENDED ESTIMATED AMOUNT FOR ANY ITEM, HIS BID WILL BE DECLARED NONRESPONSIVE.

In the event there is a difference between a unit price and the extended total, the unit price will be held to be the intended bid. If the bidder shows only the total price but fails to enter a unit price, the total divided by the estimated quantity will be held to be the intended unit price.

Any bid price for items indicated above which are unbalanced as to price may be rejected as non-responsive. An unbalanced bid is one which is based on price significantly less than cost for some work and price which is significantly overstated for other work.

Award will be made as a whole to one bidder.

AC = Acre	CF = Cubic Feet	CY = Cubic Yard
DH = Miles	EA = Each	FC = 1000 Cubic Feet
FT = Foot	HF = 100 Feet	HH = 100 Cubic Feet
HL = 100 Linear Feet	HR = Hours	HS = 100 Square Feet
HY = 100 Yards	LB = Pound	LF = Linear Foot
LH = Labor Hour	JA = JOB	LY = Linear Yard
MO = Months	SB = Square Mile	SF = Square Foot
SQ = Square	SY = Square Yard	TL = 1000 Linear Feet
TN = Net Ton	UN = Unit	YD = Yard
YL = 100 Linear Yards	YM = Cubic Yards Per Mile	CCY = Compacted Cubic Yard

All quantities are estimated except where unit is given as "ls" or "EA".

NOTE 2: If a bid or modification to a bid based on unit prices is submitted and provides for a JOB adjustment to the total estimated cost, the application of the JOB adjustment to each unit price, including JOB units, in bid schedule must be stated, or, if it is not stated, the bidder agrees that the JOB adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.

NOTE 3: Bidders are cautioned to read Contract Clause entitled "Required Central Contractor Registration: (252.204-7004) located in Section 00 70 00.00 11 CONTRACT CLAUSES.

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DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

SECTION 00 70 00.00 11

CONTRACT CLAUSE INSERTS

12/01/10

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SECTION 00 70 00.00 11

CONTRACT CLAUSE INSERTS
12/01/10

PART 1 GENERAL

1.1 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-07 Certificates

Certificate or Written Evidence of Insurance; G

Field Notes and All Other Records Relating to the Survey; G

1.2 FAR 52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 310 calendar days after the date of receipt by him of notice to proceed. The time stated for completion shall include final cleanup of the premises. (FAR 52.211 10)

1.3 FAR 52.211-12 LIQUIDATED DAMAGES CONSTRUCTION (SEP 2000)

a. If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of, $625.00 for each calendar day of delay until the work is completed or accepted.

b. If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause. (FAR 52.211-12)

1.4 FAR 52.211-18 VARIATION IN ESTIMATED QUANTITIES (APR 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of

final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

1.5 FAR 52.228-5 INSURANCE - WORK ON A GOVERNMENT INSTALLATION (JAN 1997)

a. The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in (d) below.

b. Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective.

(1) For such period as the laws of the State in which this contract is to be performed prescribe; or

(2) Until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

c. The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request. (FAR 52.228-5)

d. The Contractor shall furnish to the Contracting Officer a Certificate or Written Evidence of Insurance. The following is the minimum amount of insurance required:

Type	Amount
Workmen's Compensation and Employer's Liability Insurance	$100,000 or statutory
Comprehensive:	
General Liability	$1,000,000 per occurrence
Automobile Liability:	
(1) Bodily Injury	$200,000 per person $500,000 per occurrence
(2) Property Damage	$50,000 per occurrence

1.6 EFARS 31.105-101 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995)

a. This clause does not apply to terminations. See SPECIAL CONTRACT REQUIREMENT entitled, "BASIS FOR SETTLEMENT OF PROPOSAls" and FAR Part 49.

b. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a Contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the Contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial

or series equipment from the Contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region V. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

c. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(2)(ii) and FAR 31.205 36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

d. When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the Contracting Officer shall request the Contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Cover Sheet. (UAI 31.105-101)

NOTE: THE CONTRACTOR MAY PURCHASE THE EQUIPMENT MANUAL FROM THE GOVERNMENT PRINTING OFFICE. THE GOVERNMENT PRINTING OFFICE TELEPHONE NO. IS 202-512 1800 and THE INTERNET ADDRESS IS http://bookstore.gpo.gov. THE CONTRACTOR MAY AlsO DOWNLOAD THE EQUIPMENT MANUAL (EP 1110-1-8) FOR THE DESIRED REGION FROM http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep.htm.

1.7 FAR 52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least 15 percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performance of the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government. (FAR 52.236 1)

1.8 FAR 52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below are for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

a. Physical Conditions. The indications of physical conditions on the drawings and in the specifications are the result of site investigations by aerial photographs and topographic surveys.

b. Weather Conditions. Information with respect to temperatures and precipitation may be obtained from the National Weather Service. Also see the Special Contract Requirements Paragraph entitled TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

c. Transportation Facilities. Access to levee will be available from IL Hwy 3. Access to the borrow pit will be from Potts Road, which runs west off of IL Hwy 37 near Urbandale, IL.

d. Additional Data. Additional data consisting of records of borings, and boring samples may be available for inspection at the U.S. Army Corps of Engineers District office in Memphis, Tennessee. (FAR 52.236 4)

1.9 FAR 52.236-16 QUANTITY SURVEYS-ALTERNATE I (APR 1984)

a. Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place.

b. The Contractor shall conduct the original and final surveys for any periods for which progress payments are requested. All these surveys shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance. The Government shall make such computations as are necessary to determine the quantities of work performed or finally in place. The Contractor shall make the computations based on the surveys for any periods for which progress payments are requested.

c. Promptly upon completing a survey, the Contractor shall furnish the originals of all Field Notes and All Other Records Relating to the Survey or to the layout of the work to the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer. (FAR 52.236 16)

1.10 FAR 52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

a. In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph i. of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Government takes possession.

c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or

replacement.

e. The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, expressed or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

h. In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

i. Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government furnished material or design.

j. This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud. (FAR 52.246-21)

1.11 UAI 52.249-5000 BASIS FOR SETTLEMENT OF PROPOSAls (JAN 1997)

Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

a. Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the Contractor's accounting records to determine total actual equipment costs.

b. If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.

c. Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.

d. Ownership costs (depreciation) will be determined using the Contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

e. License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the Contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.

1.12 DFARS 252.236-7001 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000)

a. The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

b. The Contractor shall

(1) Check all drawings immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph b; and

(5) Reproduce and print contract drawings and specifications as needed

c. In general-

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

d. Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such work as if fully and correctly set forth and described in the drawings and specifications.

e. The work shall conform to the specifications and the contract drawings identified on the following index of drawings that appears below:

Cairo Slope Flattening,
MRL - Construction,
Alexander County, IL

INDEX TO DRAWINGS

Sheet Name	Sheet Number
Cover Sheet	G-001
Location and Vicinity Maps	G-002
Index, Legend, and Abbreviations	G-003
Borrow Pit Boring Profile	B-001
Boring Legend	B-002
Reach 1 Plan and Profile - STA m13 4+00 to STA m13 29+00	C-101
Reach 1 Plan and Profile - STA m13 29+00 to STA m14 2+00	C-102
Reach 1 Plan and Profile - STA m14 2+00 to STA m14 25+00	C-103
Reach 2 Plan and Profile - STA m15 40+00 to STA m16 12+00	C-104

Reach 2 Plan and Profile - STA m16 12+00 to STA m16 40+00	C-105
Reach 3 Plan and Profile - STA m17 0+00 to STA m17 24+00	C-106
Reach 3 Plan and Profile - STA m17 24+00 to STA m17 49+00	C-107
Reach 3 Plan and Profile - STA m17 49+00 to STA m18 22+00	C-108
Reach 3 Plan and Profile - STA m18 22+00 to STA m18 32+00	C-109
Levee Crown Re-surfacing and Borrow Pit Haul Routes	C-110
Tables	C-111
Borrow Pit Plan and Profile	C-112
Typical Section with End Treatments	C-301
Cut Sections and Crown Detail	C-302
Erosion Control Details	C-501
Levee Benching Details	C-502
Ramp Benching Details	C-503
Mississippi River Hydrograph	C-504

(DFARS 252.236-7001)

1.13 DFARS 52.236-7004 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DEC 1991)

a. The Government will pay all costs for the mobilization and demobilization of all of the Contractor's plant and equipment at the contract JOB price for this item.

(1) Sixty percent of the JOB price upon completion of the Contractor's mobilization at the work site.

(2) The remaining 40 percent upon completion of demobilization.

b. The Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid if the Contracting Officer believes that the percentages in paragraphs (a) (1) and (2) of this clause do not bear a reasonable relation to the cost of the work in this contract.

(1) Failure to justify such price to the satisfaction of the Contracting Officer will result in payment, as determined by the Contracting Officer, of

(i) Actual mobilization costs at completion of mobilization;

(ii) Actual demobilization costs at completion of demobilization; and

(iii) The remainder of this item in the final payment under this contract.

(2) The Contracting Officer's determination of the actual costs in paragraph b (1) of this clause is not subject to appeal. (DFARS 252.236-7004)

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

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SPECIAL CONTRACT REQUIREMENTS

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SECTION 00 80 00.00 11

SPECIAL CONTRACT REQUIREMENTS
11/23/11

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this section to the extent referenced:

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2008) Safety and Health Requirements Manual
ER 1110-1-5	PLANT PEST QUARANTINED AREAS AND FOREIGN SOIL SAMPLES
ER 415-1-15	CONSTRUCTION TIME EXTENSIONS FOR WEATHER

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals; G

Activity Hazard Analysis; G

Accident Prevention Program; G

Hazard Communication Program; G

List of all Personnel, Vehicles and Equipment; G

SD-02 Shop Drawings

Shop Drawings

SD-03 Product Data

Material Safety Data Sheets of Each Substance

SD-05 Design Data

Pre-Construction Surveys; G, EC-D

Post-Construction Surveys; G, EC-D

SD-11 Closeout Submittals

Final As-Built Drawings; G

Findings of the Accident Investigation

1.3 EXCLUSION PERIODS IN COMPUTING COMPLETION SCHEDULES

No work will be required during the period between 15 December and 31 May, with the exception of clearing and grubbing inwhich all operations necessary for clearing and grubbing shall take place between 1 October and 31 March in accordance with section 31 11 00.00 11 CLEARING. The period of 15 December to 31 May has not been considered in computing the time allowed for completion in accordance with the contract clause entitled "COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK". The Contractor may, however, perform work during all or any part of the non work period provided that he has received prior approval therefor, in writing, from the Contracting Officer. In the event that the Contractor's operations are suspended at the beginning of or during this period, the Contracting Officer reserves the right to direct the Contractor to restore the work area to at least the level of flood protection existing prior to the Contractor's operations in the area, in accordance with the procedures of the paragraphs entitled FLOOD EMERGENCY and EXISTING FLOOD PROTECTION as applicable, all at no additional cost to the Government. No warranties pertaining to the site from 1 June to 14 December should be inferred by or is made by this paragraph.

1.4 EXCEPTION TO LIQUIDATED DAMAGES

The Contractor's obligations specified in the requirements of Section 32 92 32.00 11 ESTABLISHMENT OF TURF are exempt from liquidated damages.

1.5 RIGHTS-OF-WAY

a. The rights-of-way and easements for the work to be constructed under this contract within the limits indicated on the drawings will be provided by the Government without cost to the Contractor. However, the Contractor shall make his own arrangements with the appropriate owners or organizations for transporting his equipment across, over or under railroad tracks, highways, bridges, private property, and utility lines and shall provide at his own expense any additional right-of-way or easements required to effect such crossings, including insurance requirements of owners. Limits of right-of-way which will be provided by the Government are as indicated on the drawings. The Contractor shall layout the project right-of-way so that the right-of-way is easily identified in the field. All right-of-way markers shall remain in place throughout the life of the project and shall be removed prior to final acceptance, as directed by the Contracting Officer.

b. The Contractor shall, upon reasonable notice, without expense to the Government and at any time during the progress of the work when not being actively used for contract operations, promptly vacate and clean up any part of the Government grounds that have been allotted to or have been in use by him when directed to do so by the Contracting Officer.

c. The Contractor shall not obstruct any existing roads on the lands controlled by the United States except with the permission of the Contracting Officer, and shall maintain such roads in as good condition as

exists at the time of commencement of the work.

d. Any additional right-of-way required for access or for the Contractor's method of operation must be obtained by and at the expense of the Contractor. The Contractor shall submit written evidence to the Contracting Officer that he has obtained the rights-of-way from the property owners. The written evidence shall consist of an Authenticated Copy of the Conveyance under which the Contractor Acquired the Rights-of-Way, prepared and executed in accordance with the laws of the State or States in which the work is being performed. If temporary rights are obtained by the Contractor, the period of time shall coincide with the contract clause entitled, "COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK", of Section 00 70 00.00 11 CONTRACT CLAUSES, plus a reasonable time for any extension granted for completion of the work. The Contractor shall be solely responsible for any and all damages, claims for damages, and liability of any nature whatsoever arising from or growing out of the use of rights-of-way other than those rights-of-way furnished by the Government.

e. The Contractor shall repair, at his own expense, any and all damage to the existing roads when such damage is a result of his operations on this contract. The Contractor shall also replace, at his own expense, any and all surfacing displaced or damaged by his operations on this contract. The repairs and/or replacement shall be done to the satisfaction of the Contracting Officer.

1.6 LAYOUT OF WORK

a. Prior to the start of construction the Government will re-establish the following baselines and benchmarks at the site of the work:

(1) The baseline as shown on the drawings.

(2) The benchmarks as shown on the drawings.

b. From the baselines and benchmarks established by the Government, the Contractor shall complete the layout of the work and shall be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the specifications or on the contract drawings, subject to such modifications as the Contracting Officer may require to meet changed conditions or as a result of necessary modifications to the contract work.

c. The Contractor shall furnish, at his own expense, such stakes, templates, platforms, equipment, tools and materials, and all labor as may be required in laying out any part of the work. It shall be the responsibility of the Contractor to maintain and preserve all stakes and marks established by the Contracting Officer, if any, until authorized to remove them, and if such marks are destroyed, by the Contractor or through his negligence, prior to their authorized removal, they may be replaced by the Contracting Officer, at his discretion, and the expense of replacement will be deducted from any amounts due or to become due the Contractor. The Contracting Officer may require that work be suspended at any time when location and limit marks established by the Contractor are not reasonably adequate to permit checking of the work.

d. Quantity Surveys. The Government shall conduct a preparatory meeting with the Contractor prior to the commencement of any work requiring quantity surveys to discuss the requirements and conditions relating to

quantity surveys.

1) All surveying, including layout of work and quantity surveys, shall be accomplished by a registered land surveyor licensed in the state in which the work is performed.

(2) For periods that progress payments are requested, the Contractor shall provide: (a) the before construction survey data and after/or during construction survey data that represents the actual work in-place and to be considered for payment. (b) Along with the survey data, plotted cross-sections and profiles indicating the theoretical grades and slope lines as specified by the contract drawings and the actual grades and slope lines as constructed shall be submitted. (c) Quantity computations calculated by the end area method or other approved method indicating the end areas and tabulated volumes per station shall be submitted to verify the work in place.

(3) Quantity surveys as used in this clause means a topographical survey accomplished by ground methods with the display output recorded and stored in an electronic field book for further calculations in a computer. The Contractor shall furnish to the Contracting Officer the electronic data in Mircostation compatible files (DGN)and a comma delimited ASCII file (containing as a minimum the Point Number, Northing, Easting, Elevation, and Point Descriptor). Upon completing the survey, or portion thereof, the contractor shall not disturb the ground surface until such time that the Contracting Officer has completed Quality Assurance checks of the contractors' survey data. The Contracting Officer shall disapprove any survey information submitted by the Contractor that lacks sufficient data.

(4) Quantity Survey Method for Levee. Unless otherwise authorized by the Contracting Officer, the cross-section method shall be used to obtain the topography. Cross-sections shall be conducted to obtain the topography of constructed features including, but not limited to: height, width, grades, and slopes of excavation and/or embankments including berms and excavated material disposal areas. Individual cross-sections will depend upon the terrain but for pre-construction shall not exceed 200' intervals in straight segments and shall not exceed 25' intervals in curves and/or transitions as identified by the Contracting Officer. For post-construction surveys an interval of 100'is acceptable. The Pre-Construction Survey and the Post-Construction Surveys shall be submitted in Microstation.dgn format. Observations shall be recorded at all breaks in slopes with a maximum distance of 25' between observations. Cross sections shall be conducted at 90-degrees to the levee and at sufficient width to extend 50-feet beyond the limits of work or to the designated R.O.W. Annotated cross-sections shall be created and included in DGN format at 1"=20'. The annotated cross-sections shall indicate the Baseline; the theoretical grades and slope-lines as specified; and the actual grades and slope lines as constructed. The contractor shall plot cross sections from the survey data to visually depict the grade and sections obtained. The contractor shall use this survey data to develop the as-built drawings. During/or post-construction survey data shall be provided at the Contracting Officer's request.

e. All Right of Way shall be staked prior to commencement of construction. All Right of Way markers shall remain in place throughout the life of the project and shall be removed prior to final acceptance, as directed by the Contracting Officer.

1.7 PROGRESS CHART

The schedule of work will be in accordance with the progress chart. The progress chart required by provisions of paragraph (a) of the contract clause entitled "SCHEDULES FOR CONSTRUCTION CONTRACTS" shall be prepared on ENG Form 2454, blank copies of which can be found at the following website: http://www.mvm.usace.army.mil/contracting/forms/forms.htm. THREE COPIES OF THE SCHEDULE WILL BE REQUIRED.

1.8 SAFETY RELATED SPECIAL REQUIREMENTS

ALL WORK UNDER THIS CONTRACT SHALL COMPLY WITH THE LATEST VERSION OF U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1, AND OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) STANDARDS IN EFFECT ON THE DATE OF THE SOLICITATION. NO SEPARATE PAYMENT WILL BE MADE FOR COMPLIANCE WITH EM 385-1-1, NOR FOR COMPLIANCE WITH ANY OF THE OTHER SAFETY-RELATED SPECIAL REQUIREMENTS.

a. Accident Investigations and Reporting. Refer to EM 385-1-1, Section 1. Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported to the Contracting Officer or his representative immediately after the accident occurs. A report of all mishaps occurring on the project shall be submitted to the Contracting Officer on ENG Form 3394 within two working days following the incident. All data reported must be complete, timely, and accurate. A follow-up report shall be submitted when the estimated lost time days differ from actual lost time days. When a job related injury occurs which requires medical treatment, a supervisor of the injured employee shall accompany the injured employee to the treatment facility and explain the employee's regular duties and the availability of "Light Duty" so the injured employee can return to work as soon as possible.

b. Accident Prevention Program. Refer to the CONTRACT CLAUSE entitled, "ACCIDENT PREVENTION (ALTERNATE I)." Within 15 calendar days after receipt of Notice of Award of the contract, six copies of the Accident Prevention Program shall be submitted to the Contracting Officer for review and acceptance. As per section 01.A.11 of the EM 385-1-1; Accident Prevention Plans shall be developed and submitted by the Contractor in the formats provided in Appendix A of the EM 385-1-1. The Contractor shall address each of the elements/sub-elements in the outline contained in Appendix A in the order that they are provided in the manual. If by nature of the work an item is not applicable, the Contractor will so state and provide a justification for why that element/sub-element is not applicable. The current version of EM 385-1-1 can be accessed at http://www.hq.usace.army.mil/soh/em385/current/current38511.htm

The program shall also contain the following information:

(1) All Accident Prevention Plans shall include a site map with a brief description of the location of the project, type of work to be done and the equipment necessary to do the work.

(2) An executed LMV Form 358R Administrative Plan.

(3) An executed LMV Form 359R Activity Hazard Analysis.

(4) When marine plant and equipment are in use under a contract, the method of fuel oil transfer shall be submitted on LMV Form 414R, Fuel Oil Transfer (Refer to 33 CFR 156).

Blank copies of the forms mentioned in this paragraph can be found at the following web site: http://www.mvm.usace.army.mil/contracting/forms/forms.htm.

(5) A copy of company policy statement regarding accident prevention. The following paragraphs concerning accident reporting and maintenance inspection shall be incorporated into the company policy:

ACCIDENT REPORTING Supervisor's Responsibilities: For job related injuries which require medical treatment, a supervisor of the injured employee shall accompany the injured employee to the medical treatment facility and explain the employee's regular duties and the availability of "Light Duty" so the injured employee can return to work as soon as medically possible.

ACCIDENT REPORTING Investigation and Reporting: Report all accidents immediately to the Contracting Officer. Additionally, the contractor shall thoroughly investigate the accident and submit the Findings of the Accident Investigation along with appropriate corrective actions to the Contracting Officer on ENG Form 3394 as soon as possible but no later than two (2) working days following the accident. Implement corrective actions as soon as reasonably possible.

MAINTENANCE INSPECTION: All equipment shall be inspected prior to use on this contract. All equipment shall be re-inspected prior to use any time it is removed and subsequently returned to the contract site for use. Documentation of equipment inspections shall be made available to the Contracting Officer upon request.

(6) Copies of CPR Cards / First Aid Certificates. FIRST-AID/CPR TRAINING.

(a) A minimum of two employees shall be certified in CPR and first-aid per shift/per site (03.A.02).

(b) The project is to provide/maintain a minimum of a 16-unit first aid kit (03.A.03).

(7) Comprehensive Hazard Communication Program.

(8) Hazardous Energy Protection / Control of Hazardous Energy System (Lockout / Tagout).

(9) List of Doctors, Hospitals, and Ambulance.

(10) Drug / Alcohol Free Workplace Policy.

(11) Certification that the Site Safety and Health Officer (SSHO) has met the 30 hour OSHA course requirements as outlined in the EM 385-1-1 Section 01.A.16.

The Contractor shall not commence physical work at the site until the program has been approved by the Contracting Officer, or his authorized representative. At the Contracting Officer's discretion, the Contractor may submit his Activity Hazard Analysis for only the first phase of construction provided that it is accompanied by an outline of the remaining phases of construction. All remaining phases shall be submitted and accepted prior to the beginning of work in each phase. Also refer to

Section 1 of EM 385-1-1.

c. Comprehensive Hazard Communication Program. The Contractor shall develop, implement, and maintain at the workplace a written Comprehensive Hazard Communication Program (see Section 06.B of EM 385-1-1) that includes identification of potential hazards as prescribed in 29 CFR Part 1910.1200, effects of exposure and control measures to be used for chemical products and physical agents that may be encountered during the performance of work on this contract, provisions for container labeling, Material Safety Data Sheets, and employee training program and other criteria in accordance with 29 CFR Part 1910.1200. Training shall include communication methods and systems to be used (i.e., voice, hand signals, radios or other means), and training in the use and understanding of material safety data sheets and chemical product hazard warning labels. Prior to bringing hazardous substances, as defined in 29 CFR 1910.1200, onto the job site, a copy of the Hazard Communication Program and the Material Safety Data Sheets of Each Substance shall be submitted to the Contracting Officer and made available to the Contractor’s employees as part of his Accident Prevention Program.

d. Daily Inspections. The Contractor shall perform daily safety inspections and record them on the forms approved by the Contracting Officer. Reports of daily inspections shall be maintained at the jobsite. The reports shall be records of the daily inspections and resulting actions. Each report will include, as a minimum, the following:

(1) Phase(s) of construction underway during the inspection.

(2) Locations or areas inspections were made.

(3) Results of inspection, including nature of deficiencies observed and corrective actions taken, or to be taken, date, and signature of the person responsible for its contents.

e. Machinery and Mechanized Equipment. Machinery and mechanized equipment used under this contract shall comply with the following:

(1) When mechanized equipment is operated on floating plant, the Contractor shall provide positive and acceptable means of preventing this equipment from moving or falling into the water. The type of equipment addressed by this clause includes front-end loaders, bulldozers, trucks (both on-road and off-road), backhoes, track hoes, and similar equipment. If the Contractor plans to use such equipment on floating plant, an activity hazard analysis must be developed for this feature of work. The plan must include a detailed explanation of the type or types of physical barriers, curbs, structures, etc., which will be incorporated to protect the operator and prevent the equipment from entering the water. Nonstructural warning devices may be considered for situations where the use of structural barriers is determined to be impracticable. The activity hazard analysis must thoroughly address the procedure and be submitted to the Corps of Engineers for review and acceptance prior to start of this feature of work.

(2) The stability of crawler, truck, and wheel-mounted cranes shall be assured.

(a) The manufacturer's load rating chart may be used to determine the maximum allowable working load for each particular crane's

boom angle provided a test load, with a boom angle of 20 degrees, conforms the manufacturer's load rating table.

(b) Stability tests are required if:

(i) There is no manufacturer's load-rating chart securely fixed to the operator's cab;

(ii) There has been a change in the boom or other structural members; or

(iii) There has been a change in the counterweight.

The test shall consist of lifting a load with the boom in the least stable undercarriage position and at an angle of 20 degrees above the horizontal. The test shall be conducted under close supervision on a firm, level surface. The load that tilts the machine shall be identified as the test load. The test load moment (in ft lbs) shall then be calculated by multiplying the horizontal distance (in ft) from the center of rotation of the machine to the test load, times the test load (in lbs). Three fourths of this test -load moment shall then be used to compute the maximum allowable operating loads for the boom at 20, 40, 60, and 80 degrees above horizontal. From these maximum allowable operating loads, a curve shall be plotted and posted in the cab of the machine in sight of the operator. These values shall not be exceeded except in the performance test described below. The test load shall never exceed 110 percent of the manufacturer's maximum rated capacity.

(c) In lieu of the test and computations above, the crane may be load tested for stability at each of the four boom positions listed above.

(3) Performance tests shall be performed in accordance with Section 16 of EM 385-1-1. Performance tests shall be conducted after each stability test, when the crane is placed in service on a project, and at least every 12 months.

(4) Inspections shall be made which will ensure a safe and economical operation of both cranes and draglines. Specific inspections and their frequencies are listed on the appropriate check lists noted below. Results of inspections and tests for cranes shall be recorded on the Safety Inspection Check List, LMV Form 326R, and inspection results for draglines shall be recorded on LMV Form 373R (both available at the following website: http://www.mvm.usace.army.mil/contracting/forms/forms.htm). Copies of the inspections and tests shall be available at the jobsite for review. All stability and performance tests on cranes and all complete dragline inspections shall be witnessed by the Contracting Officer or his authorized representative.

(5) A complete dragline inspection shall be made:

(a) At least annually;

(b) Prior to the dragline being placed in operation; and

(c) After the dragline has been out of service for more than six

months.

f. Safety Sign. The Contractor shall furnish, erect, and maintain a safety sign at the site, as located by the Contracting Officer. The sign shall conform to the requirements of this paragraph and the drawing entitled "SAFETY SIGN," found at the following website: http://www.mvm.usace.army.mil/contracting/forms/forms.htm. The lettering shall be black and the background white. When placed on floating plant, the sign may be half size. Upon request, the Government will furnish decal(s) of the Engineer Castle. The sign shall be erected as soon as practicable, but not later than 15 calendar days after the date established for commencement of work. The data required shall be current.

1.9 CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of material with specification requirements shall be executed in four copies. Each certificate shall be signed by an official authorized to certify on behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the test to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

1.10 CONTRACTOR'S CERTIFICATE

Each submittal of shop drawings and materials data shall be accompanied by a certificate, signed by the head of the Quality Control Organization of the prime Contractor, that the prime Contractor has reviewed in detail all shop drawings and materials contained in the submittal and that they are correct and in strict conformance with the contract drawings and specifications except as may be otherwise explicitly stated. The Government will first check for the Contractor's certificate and then review and render approval action or indicate disapproval in those cases where contract requirements are not fulfilled.

1.11 SHOP DRAWINGS

The Contractor shall submit to the Contracting Officer for approval six copies of all Shop Drawings as called for under the various headings of these specifications. These drawings shall be complete and detailed. If approved by the Contracting Officer, each copy of the drawings will be identified as having received such approval by being so stamped and dated. The Contractor shall make any correction required by the Contracting Officer. If the Contractor considers any correction indicated on the drawings to constitute a change to the contract drawings or specifications, notice as required under the contract clause entitled "CHANGES," will be given to the Contracting Officer. The Contracting Officer will retain five sets of all shop drawings and one set will be returned to the Contractor. The approval of the drawings by the Contracting Officer shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. Approval of such drawings will not relieve the Contractor of the responsibility for any errors which may exist as the Contractor shall be responsible for the

dimensions and design of adequate connections, details, and satisfactory construction of all work.

1.12 AS-BUILT DRAWINGS

The Contractor shall maintain three full-sized sets of the Contract drawings depicting a current record of the work as actually constructed. One set is for the Contractor's use and the other sets are for the Government's use. These working as-built drawings, redline mark-ups, may be manually or electronically generated using the construction plans. These working as-built drawings shall be reviewed at least monthly with the Contracting Officer, prior to the Contractor submitting a request for progress payment. Both the Contracting Officer and the Contractor shall certify that the as-built drawings are accurate and up-to-date before progress payment is made. Up-to-date as-built drawings constitute the demonstration, in writing, of all work accomplished since the commencement of construction. Upon completion of construction and not later than 60 days after acceptance of the work, the Contractor shall deliver two complete final sets of the as-built, red-line marked-up plans, depicting the construction as actually accomplished. The contractor shall also provide a scanned/electronic copy of the complete final set of as-built drawings. When possible, it is preferred that the as-built drawing be delivered at the final inspection. The final as-built drawings shall be identified as such by marking or stamping them with the words "AS-BUILT DRAWINGS" in letters at least 3/16 inches high. Those drawings where no change is involved shall be marked or stamped "AS-BUILT, NO CHANGE". Compliance and delivery of the Final As-Built Drawings will be enforced through the approval of final payment. The quality of the final as-built drawings shall be reflected in the Contractor's performance evaluation. Final Progress Payments or a portion thereof will be withheld until the required final as-built drawings are submitted and accepted by the Government.

1.13 DAMAGE TO WORK

The responsibility for damage to any part of the permanent work shall be as set forth in the contract clause entitled "PERMITS AND RESPONSIBILITIES". However, if, in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood, tornado, or earthquake, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or JOB prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or JOB prices applicable to any part of such work, an equitable adjustment pursuant to the contract clause entitled "CHANGES" will be made as full compensation for the repairs of that part of the permanent work for which there are no applicable contract unit or JOB prices. Except as herein provided, damage to all work (including temporary construction), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense regardless of the cause of such damage.

1.14 NOTIFICATION OF AREA ENGINEER BEFORE BEGINNING WORK

At least seven days before beginning work, the Contractor shall notify Mr. Jack Ratliff, Area Contracting Officer, Area Office, 706 Harry S. Truman

Boulevard, Caruthersville, Missouri 63830-1268, Telephone No. (573) 333-1043. COLLECT CALls WILL NOT BE ACCEPTED.

1.15 RETESTING OF CONSTRUCTION MATERIAls

Unless otherwise specified, where the Technical Specifications state that tests will be performed at the expense of the Government, the cost of only the initial test will be borne by the Government. Any retesting due to failure of the materials to meet the requirements in the initial test or any retesting requested by the Contractor shall be performed at the Contractor's expense. The retests shall be at laboratories approved by the Contracting Officer. The costs of retests made at Government laboratories will be deducted from the total amount due the Contractor.

1.16 VEHICLE WEIGHT LIMITATIONS

Vehicle weight limitations for operation on roads, streets, and bridges may affect the prosecution of work under this contract. The Contractor will be responsible for obtaining all necessary licenses and permits in accordance with the clause entitled, "PERMITS AND RESPONSIBILITIES" of Section 00 70 00.00 11 CONTRACT CLAUSES.

1.17 OBSTRUCTIONS

a. Utilities. Above ground and underground utilities indicated on the plans are approximate only, and those indicated are not necessarily all which may exist on the project site. The Contractor shall determine the actual location of all utilities on the project site. All utilities located at the site are to remain in place and operative during the construction. At least 10 days before beginning work in the vicinity of a utility, the Contractor shall call the appropriate "CALL BEFORE YOU DIG" number listed below. The Contractor shall exercise special care when working in the vicinity of utilities to prevent damage thereto or injury to the Contractor's employees or others. Any damage to the utilities or interruptions of service occasioned by the Contractor's operations shall be repaired and the service restored promptly at his expense.

In the event the Contractor elects to have utilities relocated for his own convenience, he shall make his own arrangement with utility owners for the rerouting and replacement to their permanent location after completion of the work adjacent thereto. All costs associated with utility relocation for the Contractor's convenience shall be at Contractors expense.

CALL BEFORE YOU DIG NUMBER(S)

ILLINOIS--1-800-892-0132

b. Mile Posts and Stage Gages. The Contractor shall, when necessary to perform the work under this contract, remove all levee mileposts and stage gages encountered within the work limits. After completion of the work, the Contractor shall reinstall the levee mileposts at their proper location and shall reset the stage gages at their correct elevations. Survey notes and records attesting to the locations and elevations of the mileposts and gages shall be furnished to the Contracting Officer. The Contractor shall be responsible for any damage to mileposts and gages caused through his fault or negligence. No separate payment will be made for the removal and restoration of mileposts and gages, and all cost incurred by this clause shall be considered an incidental expense of the Contractor. The Contractor will contact the Memphis District Geospatial Branch (Matt Turner

901-544-0654) prior to the removal of any milepost or gage.

c. Local Interest Contact. In the event that the Contractor needs to contact the Local Interest directly regarding obstructions, he may use the following as a point of contact: Mr. Jeff Denny, Chief Engineer, Cairo Drainage District, Telephone No. (618) 306-2137.

d. Existing Fences and Cattle Guards. Others, as the construction progresses, will remove existing fences and cattle guards within the work limits, if necessary. The Contractor shall notify Mr. Jeff Denny, Chief Engineer, Cairo Drainage District, Telephone No. (618) 306-2137, at least 10 days prior to the date of the removal of the fences or cattle guards. The Contractor shall cooperate fully with the local officials with respect to the removal of fences or cattle guards. Any unwarrantable damage to the fences or cattle guards occasioned by the Contractor's operations shall be repaired at his expense.

1.18 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

In compliance with the General Permit of the NPDES, the Contracting Officer will file a Notice of Intent (NOI) with the State or States in which the work is being performed. In addition, the Storm Water Pollution Prevention Plan (SWPPP) required by the General Permit has been prepared and is included as Section 01 57 25.00 11 STORM WATER POLLUTION PREVENTION PLAN. The Contractor shall adhere strictly to the erosion control provisions of SWPPP and Section 01 57 20.00 11 ENVIRONMENTAL PROTECTION to minimize sediment discharge into nearby water courses to the maximum extent practicable. Furthermore, the Contractor and all subcontractors shall sign the certification contained in the SWPPP. The Contractor shall maintain the SWPPP on the construction site at all times. The SWPPP shall take precedence over the technical specifications.

1.19 ACCEPTANCE SECTIONS

Items of work under this contract shall be accepted as follows:

a. Sections of levee 1,000 feet long;

b. Acceptance of channel excavation for each 1,000 foot section will not include acceptance of turfing or other related work.

1.20 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (31 OCT 1989)

a. This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the contract clause entitled "DEFAULT (FIXED-PRICE CONSTRUCTION)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

b. The following schedule of monthly anticipated adverse weather delays is

based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the baseline for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (6) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
17	14	9	7	10	5	6	5	4	7	9	16

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), shall be calculated chronologically from the first to the last day of each month, and shall be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair-weather workdays, and issue a modification in accordance with the contract clause entitled "DEFAULT (FIXED-PRICE CONSTRUCTION)". (ER 415-1-15, Appendix A)

1.21 STONE SOURCES

a. For a list of quarries that have produced stone that meet the requirements of these specifications, view the website listed below. If a stone source is designated as "New Source," then that source has been tested and the results of those tests have indicated that the stone will meet the material quality requirements. However, the "New Sources" may not have been used; therefore, the stone gradation and quarry production capability may not have been verified. http://www.mvm.usace.army.mil/Portals/51/docs/construction/MVDStonelsT.pdf

b. Stone may be furnished either from any of the sources posted at the above website, or from any other sources designated by the Contractor and accepted by the Contracting Officer, subject to the conditions hereinafter stated.

c. After the award of the contract, the Contractor shall designate in writing only one source or one combination of sources from which he proposes to furnish stone. If the Contractor proposes to furnish stone from a source or sources not posted at the above website, he may designate only a single source for stone. Samples for acceptance testing shall be provided as required in the Technical Specifications. If the Contracting Officer does not accept a source for stone, so designated by the Contractor, the Contractor may not propose other sources but shall furnish the stone from a posted source at no additional cost to the Government.

d. In the event that the Contractor proposes to furnish stone from a posted source, and that posted source fails to meet the material quality requirements as set forth in the technical specifications, the Contractor shall identify the reason for the deficiency and shall either rectify the situation or procure stone at another posted quarry. At no time shall

stone be accepted that does not fulfill the requirements as described in the technical specifications.

e. Acceptance of a source of stone shall not be construed as acceptance of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materia ls are unsuitable for stone as determined by the Contracting Officer. Materials produced from a posted source shall meet all the requirements of the Technical Specifications.

1.22 FIELD OFFICE BUILDING

a. The Contractor shall furnish and maintain a temporary building for the use of the Government inspector(s) during the life of the contract. The building shall conform to the following requirements:

Floor Space	Not less than 300 sq. ft.
Height of Ceiling	Not less than seven feet
Windows	Not less than four
Doors	At least one
Type of Floor	Wood or Concrete
Telephone Lines, telephones, and service	At least two

The building shall be of light but weatherproof construction. The building shall be designated as a "No Smoking" building. Windows shall be arranged to open and to be fastened from the inside. Glass panels in windows shall be equipped with bars or heavy mesh screens, which will prevent easy access to the building through these panels. All door and window openings shall be provided with suitable insect screens. The door shall be of wood panel or solid core construction and shall be equipped with a durable hasp and padlock. Interior surfaces of exterior walls and ceilings shall be covered with insulating board. An inside storage room of adequate size shall be provided. The Contractor shall furnish, potable drinking water, sufficient electrical outlets for office calculators and equipment, a telephone, adequate lighting, and sanitary toilet facilities. The sanitary facilities shall include a sanitary toilet, a sink, and an adequate supply of hand soap, paper towels, and toilet paper. Electric current shall also be provided for operation of lights, appliances and electric calculators at 115 Volts A.C. Electric current may be provided by use of a portable generator. A minimum of two wall outlets shall be provided in the building. The building shall also be equipped with air conditioning, during hot weather, and a heating system, during cold weather. The office shall be equipped with at least four chairs, one locking desk, a drawing table, one two-drawer filing cabinet, and a fax machine. The Contractor shall thoroughly clean the office at least weekly. The field office, its location and all facilities shall be subject to the approval of the Contracting Officer. Should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Contracting Officer and the cost thereof will be deducted from any amount due or to become due the Contractor.

b. No separate payment will be made for furnishing and maintaining the field office building. Such building, equipment, and furnishings will remain the property of the Contractor and shall be removed upon completion of the work as provided in the contract clause entitled "OPERATIONS AND STORAGE AREAS".

1.23 HAUL ROADS

Whenever practical, one way haul roads shall be used on this contract. Haul roads built and maintained for this work shall comply with the following:

a. One way haul roads for off the road equipment; e.g., belly dumps, scrapers, and off the road trucks shall have a minimum usable width of 25 feet. One way haul roads for over the road haulage equipment only (e.g., dump trucks, etc.) may be reduced to a usable width of 15 feet. When the Contracting Officer determines that it is impractical to obtain the required width for one way haul roads (e.g., a road on top of a levee), a usable width of not less than 10 feet may be approved by the Contracting Officer, provided a positive means of traffic control is implemented. Such positive means shall be signs, signals, and/or signalman, and an effective means of speed control.

b. Two way haul roads for off the road haulage equipment shall have a usable width of 60 feet. Two way haul roads for over-the-road haulage equipment only may be reduced to a usable width of 30 feet.

c. Haul roads shall be graded and otherwise maintained to keep the surface free from potholes, ruts, and similar conditions that could result in unsafe operation.

d. Grades and curves shall allow a minimum sight distance of 200 feet for one way roads and 300 feet for two way roads. Sight distance is defined as the centerline distance an equipment operator (4.5 feet above the road surface) can see an object 4.5 feet above the road surface. When conditions make it impractical to obtain the required sight distance (e.g., ramps over levees), a positive means of traffic control shall be implemented.

e. Dust abatement shall permit observation of objects on the roadway at a minimum distance of 300 feet.

f. Haul roads shall have the edges of the usable portion marked with posts at intervals of 50 feet on curves and 200 feet maximum elsewhere. Such markers shall extend six-feet above the road surface and for nighttime haulage be provided with reflectors in both directions. However, nighttime haulage will not be allowed under this contract unless otherwise authorized by the Contracting Officer.

1.24 TEMPORARY PROJECT FENCING

Temporary project fencing as required by Paragraph 04.A.04 of EM 385-1-1 is not required on this project.

1.25 MAINTENANCE OF TRAFFIC

The Contractor shall erect and maintain such signs and barricades, as the Contracting Officer deems appropriate, for protection of the traveling public. No separate payment will be made for these provisions and all costs incurred by this clause shall be considered an incidental expense of construction. The road along the levee crown shall be closed as needed to prevent unnecessary danger to the public and maintain a safe work environment. However, at no point during construction shall landowners be prohibited from accessing their land because of construction activities. Should a landowner require access to their land via the construction site

the contractor will make reasonable provisions to allow safe access. No separate payment will be made for these provisions and all costs incurred by this clause shall be considered an incidental expense of construction.

1.26 COOPERATION WITH OTHERS

Within the construction and right-of-way limits of this contract, the Contractor shall coordinate all construction operations with the Cairo Drainage District, the City of Cairo, and contractors of other U.S. Army Corps of Engineer contracts that are underway in the vicinity. Close cooperation between the Contractor's personnel and all other personnel within the construction right of way limists will be required. In the event of controversy between the Contractor's personnel and other personnel, the Contracting Officer's decision will be final; however, if the Contractor is in disagreement with the decision, the matter may be pursued under the contract clause entitled, "DISPUTES".

1.27 HOURS OF WORK

Work will be confined to the working hours of sunrise to sunset, except for national holidays and as specified in the paragraph entitled SECURITY REQUIREMENTS. The National holidays are Martin Luther King's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day, and New Years Day. Additional work hours shall be subject to the prior approval of the Contracting Officer.

1.28 SUNDAY, HOLIDAY AND NIGHT WORK

Sunday and Holiday work will be at the option of the Contractor, but night work will not be permitted unless otherwise authorized by the Contracting Officer.

1.29 SECURITY REQUIREMENTS

All contractor and all associated sub-contractors employees shall comply with applicable installation, facility and area commander installation/facility access and local security
policies and procedures (provided by government representative). Contractor workforce must comply with all personal identity verification requirements as directed by DOD, HQDA and/or local policy. In addition to the changes otherwise authorized by the changes clause of this contract, should the Force Protection Condition (FPCON) at any individual facility or installation change, the Government may require changes in contractor security matters or processes.

The Contractor must pre-screen Candidates using the E-verify Program (http://www.dhs.gov/E?Verify) website to meet the established employment eligibility requirements. The Vendor must ensure that the Candidate has two valid forms of Government issued identification prior to ensure the correct information is entered into the E?verify system. An initial list of verified/eligible Candidates must be provided to the COR no later than 3 business days after the initial contract award.

1.30 STORAGE OF EQUIPMENT AND MATERIAls

Storage of the Contractor's equipment and materials shall be at those areas within the rights-of-way designated by the Contracting Officer.

1.31 UTILITY SERVICES

a. The Contractor shall provide at the site for all work under this contract, the necessary utility services needed for completion of work under this contract.

b. Electricity. All electric current required by the Contractor shall be furnished at his own expense. All temporary connections for electricity shall be subject to the approval of the Contracting Officer. All temporary lines shall be furnished, installed, connected and maintained by the Contractor in a workman-like manner satisfactory to the Contracting Officer, and shall be removed by the Contractor in like manner at his expense prior to completion of the construction.

1.32 COMMERCIAL WARRANTY

The Contractor agrees that the building and construction materials and building hardware furnished under this contract shall be covered by the most favorable commercial warranty the Contractor gives to any customer for such products and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the Government by any other clause of this contract. The warranty will take effect immediately after compliance by the Contractor of these specifications, and acceptance of the completed work by the Government.

1.33 PAYMENT FOR MATERIAL STORED OFF-SITE

a. In the preparation of monthly progress payment estimates, the Contracting Officer, upon request from the Contractor and in compliance with other criteria as hereinafter stated, will authorize payment, subject to availability of funds, for materials delivered to the Contractor at locations other than the site for the following items:

(1) Precast, Prestressed Concrete Deck Units.
(2) Piling: Concrete, Precast, Prestressed.

b. The following criteria must be satisfied before the prescribed payment will be approved.

(1) The Contractor shall furnish written evidence that he holds title to the material.
(2) The Contractor shall furnish evidence of the value of the materials.
(3) The materials shall have prior approval for incorporation into the work, i.e., required shop drawings, certificates of compliance, etc., must have been submitted and final approval action taken.
(4) The materials must be properly stored to the satisfaction of the Contracting Officer.

c. Other materials having a value exceeding $5,000.00 and delivered to the Contractor at locations other than the site may be considered for payment at the sole discretion of the Contracting Officer.

1.34 WORK IN QUARANTINED AREA

The work called for by this contract involves activities in counties quarantined by the Department of Agriculture to prevent the spread of certain plant pests which may be present in the soil. The Contractor agrees that all construction equipment and tools to be moved from such

counties shall be thoroughly cleaned of all soil residues at the construction site with water under pressure and that hand tools shall be thoroughly cleaned by brushing or other means to remove all soil. In addition, if this contract involves the identification, shipping, storage, testing, or disposal of soils from such a quarantined area, the Contractor agrees to comply with the provisions of ER 1110-1-5 and attachments; a copy of which will be made available by the Contracting Officer upon request. The Contractor agrees to assure compliance with this obligation by all subcontractors.

1.35 FLOOD EMERGENCY

a. In the event that a threat of flood is considered to exist or to be impending during work under this contract, the Contractor, if ordered, shall perform emergency operations as directed by the Contracting Officer. An equitable adjustment in the contract price will be made in accordance with the contract clause entitled "CHANGES" on account of the additional work required.

b. Should the Contractor, after specific notification by the Contracting Officer that a flood emergency is considered to exist, or to be impending, fail to complete, without delay, the emergency operations as specified in paragraph "a" above, or should the flood emergency be of such nature that, in the opinion of the Contracting Officer, the Contractor is unable to complete the required emergency operations in time, the Contracting Officer shall have the right to prescribe the location and the order of work by the Contractor for the duration of the flood emergency and to employ the necessary equipment and perform all or any part of such work or to cause all or any part of such work to be performed by others. No payment will be made to the Contractor for any work performed by the Contracting Officer or for any work performed by others under the terms of this paragraph. No payment will be made for any added expense to the Contractor occasioned by construction difficulties arising from operations of the Contracting Officer or operations of others under the terms of this paragraph.

c. The right is reserved by the Contracting Officer to suspend the Contractor's operations for such period or periods of time during threat of impending flood or flood emergency as may be necessary. Intervals during which work is suspended by order of the Contracting Officer under the provisions of this paragraph will not be counted as part of the contract period.

1.36 PATENTS, PROPRIETARY RIGHTS

a. The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

b. In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed hereunder, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

1.37 PROTECTION OF MATERIAls AND WORK

The Contractor shall at all times protect and preserve all materials, supplies, and equipment of every description (including property which may be Government-furnished or owned) and all work performed. All reasonable requests of the Contracting Officer to enclose or specially protect such property shall be complied with without delay. If, as determined by the Contracting Officer, material, equipment, supplies, and work performed are not adequately protected by the Contractor, such property may be protected by the Government and the cost thereof may be charged to the Contractor or deducted from any payments due to him.

1.38 EXISTING FLOOD PROTECTION

The Contractor shall conduct the construction of all work under this contract in such manner that existing flood protection within the limits of the existing embankments is maintained at all times. The embankments shall not be disturbed except as necessary to perform the work. When the work under this contract is completed, flood protection within such areas shall be at least equal to that existing before start of construction.

1.39 INSPECTION

All work to be performed under this contract shall conform to the requirements of these specifications and shall be approved by the Contracting Officer. The presence or absence of Government personnel shall not relieve the Contractor of responsibility for the proper execution of the work in accordance with these specifications.

1.40 DESIGNATED BILLING OFFICE

The designated billing office for this contract shall be the Caruthersville Area Office, 706 Harry S. Truman Blvd., Caruthersville, Missouri 63830-1268.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

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SECTION 01 11 00.00 11

SUMMARY OF WORK
1/10/08

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

1.1.1 Project Description

The work consists of furnishing all plant, labor and materials for placing embankment to flatten the levee slope of the Cairo to Cache Mississippi River Levee. The slope flattening work is seperated into three reaches: Reach 1-STA M13 3+40 to STA M14 25+38; Reach 2- STA M15 39+68 to STA M16 40+23; Reach 3- STA M16 52+72 to STA M18 32+21. Additional work includes clearing and grubbing and disposal of debris therefrom; and levee crown re-surfacing from STA M12 46+00 to STA M18 32+00. The estimated value of the work is between $1,000,000 and $5,000,000.

1.1.2 Location

The work shall be located in Alexander County, IL, as indicated in the contract drawings.

1.2 EXISTING WORK

In addition to "FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements":

a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.

b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

1.3 LOCATION OF UNDERGROUND FACILITIES

Verify the elevations of existing piping, utilities, and any type of underground obstruction not indicated to be installed or removed, but indicated or discovered during work to be conducted or installed. For further instructions and details, see the paragraph entitled, "OBSTRUCTIONS" in Section 00 80 00.00 11 SPECIAL CONTRACT REQUIREMENTS.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

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MEASUREMENT AND PAYMENT

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SECTION 01 22 00.00 11

MEASUREMENT AND PAYMENT
1/10/08

PART 1 GENERAL

1.1 JOB PAYMENT ITEMS

Payment items for the work of this contract for which contract JOB payments will be made are listed in the BIDDING SCHEDULE and described below. All costs for items of work, which are not specifically mentioned to be included in a particular JOB or unit price payment item, shall be included in the listed JOB item most closely associated with the work involved. The JOB price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.1.1 Mobilization and Demobilization

a. Payment

Payment will be made for costs associated with mobilization and demobilization, as defined in 00 70 00.00 11 Contract Clauses PAYMENT FOR MOBILIZATION AND DEMOBILIZATION, paragraph 1.16.

b. Unit of measure, JOB: JA

1.1.2 Environmental Protection

a. Measurement

No measurement will be made for Environmental Protection.

b. Payment

Payment will be made for costs associated with operations necessary for environmental protection as specified in Section 01 57 20.00 11 ENVIRONMENTAL PROTECTION. This price and payment shall be considered full compensation for furnishing all plant, labor, materials, and equipment and for performing all operations necessary for "Environmental Protection." This price and payment does not include those items covered under "Storm Water Pollution Prevention;" however, it does include items incidental thereto. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. The Contractor shall be responsible for payment of all fines/fees arriving from violation or non-compliance with Federal, State, Regional, and local laws or regulations. The Government will not provide any compensation for payments of fines/fees, in the event that fines/fees are incurred by the Contractor.

c. Unit of measure, JOB: JA

1.2 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract progress payments will be based are listed in Section 00 41 00.00 11 - BIDDING SCHEDULE and are described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests, and reports, and for performing all work required for each of the unit price items.

Payment items for the work of this contract for which unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, meeting safety requirements, tests and reports, and for performing all related work required for which separate payment is not otherwise provided.

1.2.1 Storm Water Pollution Prevention

No separate measurement or payment will be made for the work "Storm Water Pollution Prevention" required by Section 01 57 25.00 11 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) except as described in the paragraphs SILT FENCE, EROSION CONTROL BERM, and CONSTRUCTION ENTRANCE/EXIT below. Any additional costs associated with Storm Water Pollution Prevention, other than these listed, shall be included in the contract price under Environmental Protection. The Government will pay all costs for the "Storm Water Pollution Prevention" at the contract unit price for each sub-item list below as follows:

(1) Sixty percent of the unit price upon completion of the installation.

(2) The remaining forty percent throughout the contract life, with a maximum of twenty percent being retained until final removal and cleanup of the premises.

The Contracting Officer will require the Contractor to furnish cost data to calculate the exact percentage to be paid upon installation.

1.2.1.1 Silt Fence or Equivalent

a. Measurement

Measurement for Silt Fence or equivalent erosion control measure satisfactorily placed will be made by the linear foot.

b. Payment

Payment for Silt Fence or Equivalent as specified herein will be made at the contract unit price per linear foot for "Silt Fence or Equivalent" as broken down by the percentages in the "sub-item list" above. Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment, including filter fabric, and performing all operations necessary for the placement and maintenance of Silt Fences throughout the contract period, including

final dressing and cleanup.

c. Unit of measure: Linear Foot, LF.

1.2.1.2 Construction Entrance/Exit

a. Measurement

Measurement for Construction Entrance/Exit satisfactorily designed, constructed and maintained by the Contractor will be per each placed.

b. Payment

Payment for the temporary Construction Entrance/Exit, including its maintenance and removal, will be made at the contract JOB price for "Construction Entrance/Exit" as broken down by the percentages in the "sub-item list" above. Price and payment shall constitute full compensation for furnishing the design and all plant, labor, equipment, mechanical street sweeper and material to complete the work as specified herein and as shown on drawings.

c. Unit of measure, Each: EA.

1.2.2 Clearing and Grubbing

a. Measurement for clearing and grubbing will be per Acre (AC), measured along the areas of work for embankment as indicated on the plans. For measurement purposes the acreage will be computed to the nearest 1/10 acre for the satisfactorilly completed and accepted work.

b. Payment for Clearing and Grubbing as specified in this section will be made at the contract unit price per acre, which shall constitute full compensation for furnishing all materials, equipment and labor as required. This includes all other operations incidental thereto, to include removal and disposal of cleared materials, filling holes resulting from clearing and grubbing operations. No payment will be made for areas where the clearing and grubbing do not meet the criteria specified on the contract drawings and in Section 31 11 00.00 11 CLEARING.

c. Unit of measure, Acre: AC.

1.2.3 Establishment of Turf

a. Areas to have Establishment of Turf will be measured for payment by the acre. Establishment of Turf shall take place within the areas specified in Section 32 92 32.01 11 - Establishment of Turf.

b. Payment for Establishment of Turf will be made at the applicable contract unit price per acre for "Establishment of Turf", which price and payment shall constitute full compensation for furnishing all plant, labor, equipment, and materials, and performing all operations necessary for Establishment of Turf as specified in Section 32 92 32.00 11 - Establishment of Turf. No payment for Establishment of Turf will be made until acceptance by the Contracting Officer or his representative.

c. Unit of measure, Acre: AC.

1.2.4 Semi-Compacted Embankment

a. Measurement for semi compacted impervious and random fill Embankment shall be made by a before construction survey and after construction survey of the site as specified in section 00 80 00.00 11, Paragraph 1.6 Layout of Work, subparagraph d. "Quantity Surveys." All measurement of embankment will be based on these surveys. The quantity of embankment to be paid for will be computed between the before construction survey ground surface, as determined by the above noted surveys, and the theoretical slope and grade lines for such embankment as indicated on the drawings and/or specified herein. No allowance or payment will be made for Embankment not constructed to design grade and section including allowable tolerance. The Constractor is to use the Government furnished borrow area for embankment materials.

b. Payment for Embankment as specified in Division 31 - Earthwork will be made at the contract unit price per Cubic Yard (CY). No payment shall be made for placement of Embankment above the theoretical lines and grades as indicated on the drawings. Price and payment shall constitute full compensation for furnishing all plant, labor materials, and equipment and performing all operations necessary for the management of earthen material within the Rights of way and placement of Embankment to the lines and grades as indicated on the drawings and described in Section 31 24 00.00 12 - Embankment and Section 31 23 00.00 12 - Excavation. Work incidental to Embankment includes excavation, hauling, processing, placement, compaction, stripping, development of borrow pit, unwatering, temporary stabilization and haul road maintenance.

c. Unit of measure, Cubic Yard: CY.

1.2.5 Aggregate Surface Course (4 inch thickness)

a. Measurement for the Aggregate Surface Course (4 inch thickness) shall be made made per Compacted Cubic Yard (CCY) installed outside the extents of Reach 1, Reach 2, or Reach 3. The aggregate placement and compaction will be measured by multiplying the aggregate resurfacing theoretical design cross-section by the length of the levee to be resurfaced. The aggregate resurfacing theoretical design cross section is defined as the compacted design thickness multiplied by the theoretical crown width, as indicated on the drawings. The measured widths and thickness of aggregate placed and compacted shall be within tolerances specified in Section 32 15 00.00 11 - AGGREGATE SURFACE COURSE. The gravel shoulder will not be measured for payment and will be incidental to Aggregate Placement and Compaction. Measurement will be conducted in the field for verification that aggregate placement and compaction falls within the specified tolerances.

b. Payment for Aggregate Surface Course will be made at the applicable contract unit price per compacted cubic yard for "Aggregate Surface Course", which price and payment shall include all costs of furnishing, hauling, handling, placement, and maintaining the aggregate material; all as specified in Section 32 15 00.00 11 - Aggregate Surface Course.

c. Unit of measure: Cubic Yard: CY.

1.2.6 Aggregate Surface Course (6 inch thickness)

a. Measurement for the Aggregate Surface Course (6 inch thickness) shall be made made per Compacted Cubic Yard (CCY) installed within the extents of Reach 1, Reach 2, or Reach 3. The aggregate placement and compaction will be measured by multiplying the aggregate resurfacing theoretical design cross-section by the length of the levee to be resurfaced. The aggregate resurfacing theoretical design cross section is defined as the compacted design thickness multiplied by the theoretical crown width, as indicated on the drawings. The measured widths and thickness of aggregate placed and compacted shall be within tolerances specified in Section 32 15 00.00 11 - AGGREGATE SURFACE COURSE. The gravel shoulder will not be measured for payment and will be incidental to Aggregate Placement and Compaction. Measurement will be conducted in the field for verification that aggregate placement and compaction falls within the specified tolerances.

b. Payment for Aggregate Surface Course will be made at the applicable contract unit price per compacted cubic yard for "Aggregate Surface Course", which price and payment shall include all costs of furnishing, hauling, handling, placement, and maintaining the aggregate material; all as specified in Section 32 15 00.00 11 - Aggregate Surface Course.

c. Unit of measure, Cubic Yard: CY.

1.2.7 Geotextile

a. Measurement for the Geotextile shall be made by the square yard. Measurement shall be made for geotextilec placed beneath the Aggregate Surface Course in all appropriate areas as indicated on the plans. Measurement will only be made for geotextile placed in accordance with Section 32 15 00.00 - Aggregate Surface Course and 31 05 19 - Geotextile. No measurement will be made for Geotextile placed outside areas designated on the plans as requiring geotextile. Measurement shall be made to the nearest square yard.

b. Payment for Geotextile will be made at the applicable contract unit price per square yard for "Geotextile", which price and payment shall include all costs of furnishing, hauling, handling, placement, and maintaining the Geotextile; all as specified in Section 32 15 00.00 - Aggregate Surface Course and Section 31 05 19 - Geotextile.
c. Unit of measure: Cubic Yard: CY.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

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SUBMITTAL PROCEDURES

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PART 3 EXECUTION (Not Used)

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SECTION 01 33 00

SUBMITTAL PROCEDURES
11/25/08

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Submittal

Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals."

1.1.2 Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by SD numbers and titles as follows.

SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes

assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accordance with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports.

Daily checklists.

Final acceptance test and operational test procedure.

SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

Text of posted operating instructions.

1.1.3 Approving Authority

Approving authority rests with the Contracting Officer and his/her Authorized Representative(s). Approval actions and correspondence with the Contractor shall be made through the Caruthersville Area Office.

1.1.4 Work

As used in this section, on-site and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Submittal register.; G

1.3 SUBMITTAL REGISTER

Submit the submittal register at least seven days prior to the prework conference. Verify that all submittals required for the project are listed and add any missing submittals. Complete the following on the register:

Column (g) Contractor Submit Date: Scheduled date for approving authority to receive submittals.

Column (h) Contractor Approval Date: Date Contractor needs approval of submittal.

1.4 CONTRACTOR USE OF SUBMITTAL REGISTER

Update the following fields.

Column (b) Transmittal Number: Contractor assigned list of consecutive numbers.

Column (j) Action Code (k): Date of action used to record Contractor's review when forwarding submittals to Area Engineer.

Column (l) List date of submittal transmission.

Column (q) List date approval received.

1.5 APPROVING AUTHORITY USE OF SUBMITTAL REGISTER

Update the following fields.

Column (b).

Column (l) List date of submittal receipt.

Column (m) through (p).

Column (q) List date returned to Contractor.

1.6 COPIES DELIVERED TO THE GOVERNMENT

Deliver one copy of submittal register updated by Contractor to Government with each invoice request.

1.7 PROCEDURES FOR SUBMITTALS

1.7.1 Reviewing, Certifying, Approving Authority

The Contractor Quality Control (CQC) organization shall be responsible for reviewing and certifying that submittals are in compliance with contract requirements. Approving authority on submittals ultimately rests with the Contracting Officer, and his/her Authorized Representative(s). Approval of all submittals will be made through the Caruthersville Area Office.

1.7.2 Constraints

a. Submittals listed or specified in this contract shall conform to provisions of this section, unless explicitly stated otherwise.

b. Submittals shall be complete for each definable feature of work; components of definable feature interrelated as a system shall be submitted at same time.

c. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, submittal will be returned without review.

d. Approval of a separate material, product, or component does not imply approval of assembly in which item functions.

1.7.3 Scheduling

a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential requirements to resubmit.

b. Except as specified otherwise, allow review period, beginning with receipt by approving authority, that includes at least 15 working days for submittals for Contracting Officer's Authorized Representative approval and 20 working days for submittals for Contracting Officer approval. Period of review for submittals with Contracting Officer approval begins when Government receives submittal from CQC organization. Period of review for each resubmittal is the same as for initial submittal.

1.7.4 Variations

Variations from contract requirements require Government approval pursuant to contract Clause entitled "FAR 52.236-21, Specifications and Drawings for Construction" and will be considered where advantageous to Government.

1.7.4.1 Considering Variations

Discussion with Caruthersville Area Office prior to submission, will help ensure functional and quality requirements are met and minimize rejections and resubmittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

1.7.4.2 Proposing Variations

When proposing variation, deliver written request to the Contracting

Officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to Government. If lower cost is a benefit, also include an estimate of the cost saving. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

1.7.4.3 Warranting That Variations Are Compatible

When delivering a variation for approval, Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.7.4.4 Review Schedule Is Modified

In addition to normal submittal review period, a period of 15 working days will be allowed for consideration by the Government of submittals with variations.

1.8 CONTRACTOR'S RESPONSIBILITIES

a. Determine and verify field measurements, materials, field construction criteria; review each submittal; and check and coordinate each submittal with requirements of the work and contract documents.

b. Transmit submittals to the Government in accordance with the approved Submittal Register. To prevent delays in the work, delays to Government, or delays to separate Contractors transmit submittals using ENG FORM 4025 (Transmittal Sheet).

c. Stamp submittal data to certify that the submittal meets contract requirements.

d. Advise Contracting Officer of variation, as required by paragraph entitled "Variations."

e. Correct and resubmit submittal as directed by approving authority. When resubmitting disapproved transmittals or transmittals noted for resubmittal, the Contractor shall provide copy of that previously submitted transmittal including all reviewer comments for use by approving authority. Direct specific attention in writing or on resubmitted submittal, to revisions not requested by approving authority on previous submissions.

f. Furnish additional copies of submittal when requested by Contracting Officer, to a limit of 20 copies per submittal.

g. Complete work which must be accomplished as basis of a submittal in time to allow submittal to occur as scheduled.

h. Ensure no work has begun until submittals for that work have been returned as "Approved as submitted" or "Approved, except as noted...", except to the extent that a portion of work must be accomplished as basis of submittal.

1.9 GOVERNMENT'S RESPONSIBILITIES

a. Note date on which submittal was received from Contractor on each submittal.

b. Review each submittal; and check and coordinate each submittal with requirements of work and contract documents.

c. Review submittals for conformance with project design concepts and compliance with contract documents.

d. Act on submittals, determining appropriate action.

(1) When the Contracting Officer's Authorized Representative is the approving authority, take appropriate action on submittal.

(2) When Contracting Officer is approving authority or when variation has been proposed, forward submittal to Memphis District Office, care of the Construction Branch, with the necessary certifying statement.

e. Ensure that material is clearly legible.

f. When approving authority is Contracting Officer, Caruthersville Area Office will certify submittals forwarded to Contracting Officer with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with contract No. W912EQ-__-C-____, is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for Contractor Officer approval.

Certified by Submittal Reviewer _____, Date _____
(Signature when applicable)

Certified by Area Engineer _____, Date _____"
(Signature)

Stamp each sheet of each submittal with certifying statement, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.

g. When approving authority is the Contracting Officer's Authorized Representative, the Area Engineer will take approval action on ENG FORM 4025 (Transmittal Sheet).

h. Sign certifying statement or ENG FORM 4025 (Transmittal Sheet).

i. Update submittal register as submittal actions occur and maintain the submittal register at project site until final acceptance of all work by Contracting Officer.

j. Retain a copy of approved submittals at project site, including Contractor's copy of approved samples.

k. When approving authority is Contracting Officer, the Government will:

(1) Note date on which submittal was received by Contracting Officer, on each submittal for which the Contracting Officer is approving authority.

(2) Review submittals for approval within scheduling period specified and only for conformance with project design concepts and compliance with contract documents.

(3) Returned submittals with appropriate action indicated.

1.10 FORMAT OF SUBMITTALS

1.10.1 Transmittal Sheet

Transmit each submittal, except sample installations and sample panels, to office of approving authority. Transmit submittals on ENG FORM 4025 (Transmittal Sheet) located at the following website: http://www.mvm.usace.army.mil/contracting/forms/forms.htm. The transmittal sheet shall identify Contractor, indicate date of submittal, and include information prescribed by transmittal sheet and required in paragraph entitled "Identifying Submittals." Process transmittal sheets to record actions regarding sample panels and sample installations.

1.10.2 Identifying Submittals

Identify submittals, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal sheet. Mark each copy of each submittal identically, with the following:

a. Project title and location.

b. Construction contract number.

c. Section number of the specification section by which submittal is required.

d. Submittal description (SD) number of each component of submittal.

e. When a resubmission, add alphabetic suffix on submittal description, for example, SD-10A, to indicate resubmission.

f. Name, address, and telephone number of subcontractor, supplier, manufacturer and any other second tier Contractor associated with submittal.

g. Product identification and location in project.

1.11 SUBMISSION AND CONTROL OF SUBMITTAls

1.11.1 Submittals Required from the Contractor

Within 15 calendar days after receipt of notice to proceed, the Contractor shall complete and submit to Mr. DONNY D. DAVIDSON, Area Engineer, Caruthersville Area Office, 706 Harry S. Truman Blvd., Caruthersville, Missouri 63830-1268 submittals required in the technical sections of this specification, including shop drawings, product data and samples.

1.11.1.1 Submittal Procedures and Deviations

The Government will further discuss detailed submittal procedures with the Contractor at the Preconstruction Conference. For submittals which include

proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.11.1.2 Control of Submittals

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.11.1.3 O&M Data

Contracting Officer will review and approve the O&M Data to verify the submittals comply with the contract requirements; submit data specified for a given item within 30 calendar days after the item is delivered to the contract site. In the event the Contractor fails to deliver O&M Data within the time limits specified, the Contracting Officer may withhold from progress payments 50 percent of the price of the item with which such O&M Data are applicable.

1.12 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.12.1 Government Approved

Government approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.12.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.13 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the CQC requirements of this contract is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.14 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers

any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.15 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

1.16 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submitta ls shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the CQC System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.17 SUBMITTAL REGISTER

At the end of this section is a submittal register showing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The Government will provide the initial submittal register in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be tracked. The Contractor shall monitor the progress of all submittals.

1.18 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 21 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

1.19 TRANSMITTAL SHEET (ENG FORM 4025)

A sample transmittal sheet (ENG Form 4025), which can be found at http://www.mvm.usace.army.mil/contracting/forms/forms.htm, shall be used for submitting both Government approved and information only submittals in

accordance with the instructions on the reverse side of the form. Additionally, these forms are included in the QCS software that is available for Contractor use. The transmittal sheet shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.20 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Three copies of the submittal will be retained by the Contracting Officer and three copies of the submittal will be returned to the Contractor.

1.21 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.22 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheets(s).

SIGNATURE: _____

TITLE: _____

DATE: _____

Stamps used by the Contracting Officer's Authorized Representative on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

I hereby certify that the (equipment)(material)(article)shown and marked in this submittal is that proposed to be incorporated with contract No. W912EQ-__-C-____, is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for Contracting Officer approval.

Certified by Submittal Reviewer _____, Date _____
(Signature when applicable)

Certified by Area Engineer _____, Date _____
(Signature)

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

-- End of Section --

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION: Cairo Slope Flattening

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		00 70 00.00 11	SD-07 Certificates															
			Certificate or Written Evidence of Insurance	1.5	G													
			Field Notes and All Other Records Relating to the Survey	1.9	G													
		00 80 00.00 11	SD-01 Preconstruction Submittals															
			Activity Hazard Analysis	1.8	G													
			Accident Prevention Program	1.8	G													
			Hazard Communication Program	1.8	G													
			List of all Personnel, Vehicles and Equipment		G													
			SD-02 Shop Drawings															
			Shop Drawings	1.11														
			SD-03 Product Data															
			Material Safety Data Sheets of Each Substance	1.8														
			SD-05 Design Data															
			Pre-Construction Surveys;		G EC-D													
			Post-Construction Surveys;	1.6	G EC-D													
			SD-11 Closeout Submittals															
			Final As-Built Drawings	1.12	G													
			Findings of the Accident Investigation	1.8														
		01 45 02.00 11	SD-01 Preconstruction Submittals															
			Contractor Quality Control (CQC) Plan	1.7.3	G													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Cairo Slope Flattening

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 45 02.00 11	Contractor Administrative Data	1.7.1.1														
			SD-07 Certificates															
			Payment Requests	1.7.2.2														
			Payment Requests	1.10														
			Schedule Updates	1.10														
		01 45 04.00 11	SD-01 Preconstruction Submittals															
			Contractor Quality Control (CQC)	3.2	G													
			Plan															
		01 57 20.00 11	SD-01 Preconstruction Submittals															
			Environmental Protection Plan	1.6	G CAO													
		01 57 25.00 11	SD-05 Design Data															
			Construction Vehicle Wash-Down		G													
			Rack															
			SD-07 Certificates															
			Mill Certificate or Affidavit	4.2.2.1	G													
		31 05 19	SD-03 Product Data															
			Thread	2.1.2														
			Manufacturing Quality Control	2.2														
			Sampling and Testing															
			SD-04 Samples															
			Quality Assurance Samples and	3.1														
			Tests															
			SD-07 Certificates															
			Geotextile	2.1.1														
		31 11 00.00 11	SD-04 Samples															
			Tree wound paint	2.1														

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Cairo Slope Flattening

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		31 11 00.00 11	Herbicide	2.2														
		32 15 00.00 11	SD-03 Product Data															
			Equipment	1.4														
			SD-04 Samples															
			Representative Sample of the	1.6	G													
			Aggregate Surfacing															
			SD-06 Test Reports															
			Sampling and Testing	1.6														
			Records and Tests	1.3														
			Density Tests		G													
			Gradation Test	1.6.2.1	G													
		32 92 32.01 11	SD-03 Product Data															
			Fertilizer Invoices	2.2.3														
			Seed Invoices	2.2.1														
			SD-04 Samples															
			Mulch Material	2.2.4														
			SD-06 Test Reports															
			Certified Fertilizer Quantitative	2.1.1														
			Analysis Report															
			Certified Soil Test Results	2.2.2														
			SD-07 Certificates															
			AMS Seed Act Certification	2.2.1														
			Mulch Supplier Certification	2.1.3														
			Certified Weight Tickets for the	2.1.1														
			Fertilizer															

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS

07/06

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS
07/06

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 610-832-9500
Fax: 610-832-9555
E-mail: service@astm.org
Internet: http://www.astm.org

TURFGRASS PRODUCERS INTERNATIONAL (TPI)
2 East Main Street
East Dundee, IL 60118
Ph: 847-649-5555 or 800-405-8873
Fax: 847-649-5678
E-mail: info@turfgrasssod.org
Internet: http://www.turfgrasssod.org

U.S. ARMY CORPS OF ENGINEERS (USACE)
Order CRD-C DOCUMENTS from:
U.S. Army Engineer Waterways Experiment Station
ATTN: Technical Report Distribution Section, Services Branch, TIC
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
Ph: 601-634-2664
Fax: 601-634-2388
E-mail: mtc-info@erdc.usace.army.mil
Internet: http://www.wes.army.mil/SL/MTC/handbook.htm

Order Other Documents from:

USACE Publications Depot
Attn: CEHEC-IM-PD
2803 52nd Avenue
Hyattsville, MD 20781-1102
Ph: 301-394-0081
Fax: 301-394-0084
E-mail: pubs-army@usace.army.mil
Internet: http://www.usace.army.mil/publications
or http://www.hnd.usace.army.mil/techinfo/engpubs.htm

U.S. DEPARTMENT OF AGRICULTURE (USDA)
Order AMS Publications from:
AGRICULTURAL MARKETING SERVICE (AMS)
Seed Regulatory and Testing Branch
801 Summit Crossing Place, Suite C
Gastonia, NC 28054-2193
Ph: 704-810-8870
Fax: 704-852-4189
Internet: http://www.ams.usda.gov/lsg/seed.htm
E-mail: seed.ams@usda.gov

Order Other Publications from:
U.S. Department of Agriculture, Rural Utilities Service
14th and Independence Avenue, SW, Room 4028-S
Washington, DC 20250
Ph: 202-720-2791
Fax: 202-720-2166
Internet: http://www.usda.gov/rus

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
8601 Adelphi Road
College Park, MD 20740-6001
Ph: 866-272-6272
Fax: 301-837-0483
Internet: http://www.archives.gov

Order documents from:
Superintendent of Documents
U.S.Government Printing Office (GPO)
732 North Capitol Street, NW
Washington, DC 20401
Ph: 202-512-1800
Fax: 202-512-2104
E-mail: contactcenter@gpo.gov
Internet: http://www.gpoaccess.gov

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

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QUALITY CONTROL SYSTEM (QCS)

1/10/08

-- End of Section Table of Contents --

SECTION 01 45 02.00 11

QUALITY CONTROL SYSTEM (QCS)
1/10/08

PART 1 GENERAL

1.1 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G
Contractor Administrative Data

SD-07 Certificates

Payment Requests
Schedule Updates

1.2 CONTRACT ADMINISTRATION

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site (http://www.rmssupport.com/). This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

a. Administration
b. Finances
c. Quality Control
d. Submittal Monitoring
e. Scheduling
f. Import/Export of Data

1.2.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.2.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01 33 00, SUBMITTAL PROCEDURES, and Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.3 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website (http://www.rmssupport.com/). Upon specific justification and request by the Contractor, the Government can provide QCS on CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

1.4 SYSTEM REQUIREMENTS

The following is the minimum system configuration that the Contractor shall have to run QCS:

QCS System

Hardware

IBM-compatible PC with 1000 MHz Pentium or higher processor

256+ MB RAM for workstation / 512+ MB RAM for server

1 GB hard drive disk space for sole use by the QCS system

3 1/2 inch high-density floppy drive

Compact Disk (CD) Reader 8x speed or higher

SVGA or higher resolution monitor (1024x768, 256 colors)

Mouse or other pointing device

Windows compatible printer. (Laser printer must have 4 MB+ of RAM)

Connection to the Internet, minimum 56k BPS

Software

MS Windows 2000 or higher

QAS-Word Processing software: MS Word 2000 or newer

Latest version of: Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher

Electronic mail (E-mail) MAPI compatible

Virus protection software that is regularly upgraded with all issued manufacturer's updates

1.5 RELATED INFORMATION

1.5.1 QCS User Guide

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website (http://www.rmssupport.com/); the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.5.2 Contractor Quality Control (CQC) Training

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.6 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached by e-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.7 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government shall be submitted by e-mail with file attachments (e.g., daily reports, submittals, RFI's, schedule updates, payment requests, etc.). If permitted by the Contracting Officer, e-mail or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA CD-ROM).

1.7.1 Administration

1.7.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, deliver Contractor Administrative Data in electronic format.

1.7.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the contractor shall deliver subcontractor administrative data in electronic format via e-mail.

1.7.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with an "S". Letters initiated by the Contractor's home (main) office shall be prefixed with an "H". Letters shall be numbered starting from 0001 (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.7.1.4 Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.7.1.5 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, and Three-Phase Inspection checklists.

1.7.1.6 Request For Information (RFI)

The Contractor shall exchange all Requests For Information (RFI) using the Built-in RFI generator and tracker in QCS.

1.7.2 Finances

1.7.2.1 Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN); the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.7.2.2 Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the Payment Requests with supporting data by e-mail with file attachment(s). If permitted by the Contracting Officer, a CD-ROM may be used instead of e-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.7.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor

shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01 45 04.00 11, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.7.3.1 Daily Contractor Quality Control (CQC) Reports.

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01 45 04.00 11, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.7.3.2 Deficiency Tracking.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.7.3.3 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.7.3.4 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.7.3.5 Labor and Equipment Hours

The Contractor shall log labor and equipment exposure hours on a daily basis. This data will be rolled up into a monthly exposure report.

1.7.3.6 Accident/Safety Reporting

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g.,

ENG Form 3394 and OSHA Form 300.

1.7.3.7 Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.7.4 Submittal Management

The Government will provide the initial submittal register, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.7.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts". This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF). The updated schedule data shall be included with each pay request submitted by the Contractor.

1.7.6 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data from RMS, and schedule data using SDEF.

1.8 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.9 DATA SUBMISSION VIA CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence, and other data is by e-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function. If used, submit CD-ROMs in accordance with the following:

1.9.1 File Medium

The Contractor shall submit required data on CD-ROM running on Windows XP or newer. They shall conform to industry standards used in the United

States. All data shall be provided in English.

1.9.2 CD-ROM Labels

The Contractor shall affix a permanent exterior label to each CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name, and telephone number of person responsible for the data.

1.9.3 File Names

Files will be automatically named by the QCS software. The naming convention established by the QCS software shall not be altered in any way by the Contractor.

1.10 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with Schedule Updates and progress Payment Requests. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions.

The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

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CONTRACTOR QUALITY CONTROL
01/06/10

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 3740	(2004a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2007) Standard Specification for Agencies Engaged in Construction Inspection and/or Testing

1.2 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G

1.3 PAYMENT

No Separate payment will be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or job prices contained in the Bidding Schedule.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction". The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite,

and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

Within 15 days after receipt of Notice of Award, the Contractor shall submit in writing, an original and three copies of the Contractor Quality Control (CQC) Plan for review and acceptance by the Government. The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government may consider an interim plan for the first 15 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgement that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC system manager and an alternate CQC system manager. Each shall report to the project manager or higher in the Contractor's organization. Project manager in this context shall mean the individual with responsibility for the overall management of the project, including quality and production.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager and the alternate CQC system manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager and the alternate CQC system manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager and/or his alternate shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures

shall be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, testing laboratory, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer shall be used.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

j. Copies of course certification for "Construction Quality Management for Contractors" for the CQC System Manager and the Alternate CQC System Manager, as a minimum.

3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.3 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference but before start of construction, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting

shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawing submitta ls, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a minimum of 5 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 Additional Requirement

In addition to the above requirements, the CQC System Manager and the alternate CQC System Manager shall have completed, within the last 5 years, the course entitled "Construction Quality Management For Contractors". This course is generally offered every quarter starting with the month of February. For further details and for the actual class schedule see the following website http://www.usace.army.mil/CECW/Documents/cecwe/cqm_trng.pdf.

3.4.4 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall

revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTAls AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01 33 00 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government shall be notified at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is

unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Laboratory Validation

A testing laboratory validated by the Material Testing Center (MTC) of the Corps of Engineers shall perform all testing of soil, gravel, aggregate, stone, concrete, and asphalt. Refer to http://gsl.erdc.usace.army.mil/SL/MTC/ for a complete and current list of validated commercial laboratories. This website is maintained by the MTC which can be contacted at MTC-INFO@usace.army.mil. If the Contractor proposes to use a commercial laboratory that is not validated or set up an on-site laboratory, he shall make arrangements for validation by contacting the Material Testing Center at Waterways Experiment Station, Vicksburg, Mississippi, telephone numbers: 601-634-2496 or 601-634-3610, www.wes.army.mil/SL/MTC/inspection.htm. The Government will not be responsible for any cost associated with the validation of laboratories that are not currently validated. The validation process could take 60 to

90 days or more. The Contractor shall be responsible for determining the amount of time required for the validation of the proposed laboratory and accounting for this event in his/her progress schedule. If the Contractor elects to use a non-validated laboratory, the work that requires testing shall not commence until the laboratory has been validated by MTC.

3.7.2.2 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.3 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor. There will be no extension of time allowed due to necessity to perform capability rechecks.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. The Contractor, to a location specified by the Contracting Officer, shall deliver samples of materials for test verification and acceptance testing by the Government.

Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Contract Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

g. Offsite surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materia ls incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

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PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2008) Safety and Health Requirements Manual
WETLAND MANUAL	Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions of Waters of the United States
40 CFR 152 - 186	Pesticide Programs
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
40 CFR 68	Chemical Accident Prevention Provisions
49 CFR 171 - 178	Hazardous Materials Regulations

1.2 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, CAO

1.3 DEFINITIONS

1.3.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.3.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.3.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on-site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners,excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

1.3.4 Project Pesticide Coordinator

The Project Pesticide Coordinator (PPC) is an individual that resides at a Civil Works Project office and that is responsible for oversight of pesticide application on Project grounds.

1.3.5 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.3.6 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.3.7 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi,

bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.3.8 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers,creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.3.9 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.3.10 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with the WETLAND MANUAL.

1.3.11 Spill or Hazardous Substance Release of "Reportable Quantity"

The "reportable quantity" for any spill or hazardous substance release shall be as prescribed by the State or States in which the work is being performed. It is the Contractor's responsibility to know what the "reportable quantity" is for each State in which he is performing work.

1.4 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.5 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.6 ENVIRONMENTAL PROTECTION PLAN

Within 15 days after receipt of Notice of Award of the Contract, the Contractor shall submit, in writing, an original and three copies of the Environmental Protection Plan for review and acceptance by the Government.

The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. The Contractor shall address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but which the Contractor considers necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, the Contractor shall meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained on-site by the Contractor.

1.6.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.6.2 Contents

The environmental protection plan shall include, but shall not be limited to, the following:

a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

d. Description of the Contractor's environmental protection personnel training program.

e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations.

f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, stockpiles of earthen material, and disposal areas for excess earth material and unsatisfactory earth material including methods to control runoff and to contain materials on the site.

g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the transport of

sediment onto paved public roads by vehicles or runoff.

h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

i. Drawing showing the location of borrow areas, if applicable.

j. The Spill Control Plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer. Additionally, the individual shall work the legally required Federal, State, and local reporting channels including the National Response Center 1-800-424-8802 if any spill or hazardous substance of reportable quantity is released into the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste

generated and total amount of waste diverted in cubic yards or tons along with the percent that was diverted.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become airborne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on-site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on-site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

p. A cultural resources protection plan (historical, archeological materials, etc. under provisions of National Historic Preservation Act) that defines procedures for identifying and protecting cultural resources known to be on the project site and/or procedures to be followed for inadvertent discoveries that might occur during construction. This plan shall include methods to assure the protection of known or discovered resources, and it shall identify lines of communication between Contractor personnel and the Contracting Officer.

q. A biological resources plan (including wetlands, endangered species, etc.) that defines procedures for identifying and protecting biological resources known to be on the project site and/or identifying procedures to be followed if biological resources not previously known to be on-site or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources, and it shall identify lines of communication between Contractor personnel and the Contracting Officer.

r. A pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and local pest management record keeping and reporting requirements as well as any additional Project Office specific requirements.

1.6.3 Appendix

Copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents shall be attached,as an appendix, to the Environmental Protection Plan.

1.7 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any on-site construction activities, the Contractor and the Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs, vines, grassed areas, and ground cover immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.8 SPECIAL ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with all conditions imposed by the State Water Quality Certification and the environmental requirements listed here, and in the SWPPP.

1.9 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings,plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.10 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection Plan. The Contractor shall, after receipt of such notice,

inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations. This paragraph supplements the Contractor's responsibility under the contract clause "PERMITS AND RESPONSIBILITIES" to the extent that the Government has obtained some environmental permits.

3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, as specified by the Contracting Officer, the Contractor shall mark any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that should not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings submitted by the Contractor as part of the Environmental Protection Plan to be preserved, shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.2.3 Reduction of Exposure of Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated and specified. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in instances where the constructed feature obscures borrow areas, quarries and waste material areas, these areas shall not initially be cleared in total. Clearing of such areas shall progress in reasonably sized increments as needed to use the areas as approved by the Contracting Officer.

3.2.4 Temporary Protection of Disturbed Areas

Such methods as necessary shall be utilized to effectively prevent erosion and control sedimentation, including but not limited to the following:

Retardation and Control of Runoff: Runoff from the construction site shall be controlled by construction of diversion ditches, benches, and berms to retard and divert runoff to protected drainage courses, and the Contractor shall also utilize any measures required by area-wide plans approved under Paragraph 208 of the Clean Water Act.

3.2.5 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs) as indicated on the drawings and as specified in Section 01 57 25.00 11 STORM WATER POLLUTION PREVENTION PLAN. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. The Contractor's best management practices shall also be in accordance with the National Pollutant Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan (SWPPP). In the event that State Water Quality Certification is required, all conditions of the certification shall be followed. Any temporary measures shall be removed after the area has been stabilized, but shall not be removed until permanent drainage and erosion control facilities are completed and operable.

3.2.6 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. To prevent sediment from entering nearby waters, erosion and sediment controls shall be provided for on-site borrow areas and areas of temporary or permanent excess excavated material. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.2.7 Borrow Areas Provided by the Government

When borrow areas are provided by the Government, the borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby water courses or lakes.

3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.3.1 Cofferdams, Diversions, and Dewatering Operations

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body. The Contractor shall comply with water quality standards and anti-degradation provisions of the State or States in which the work is being performed and the Clean Water Act.

3.3.2 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards. The Contractor shall keep construction activities under surveillance, management and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with the laws of the State or States in which the work is being performed and all Federal emission and performance laws and standards. Special management techniques as set forth below shall be implemented to control air pollution by the construction activities, which are included in the contract. In the event that air pollution occurs due to the Contractors actions, the Contractor shall take all necessary steps to rectify the situation to the satisfaction of the Contracting Officer.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants, shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, disposal areas of excess excavated material, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, bituminous

treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated at such intervals to keep the disturbed area damp at all times. The Contractor must have sufficient equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environmental damage by noise. The Contractor shall comply with the local allowable limits, and all rules and provisions of the State or States in which the work is being performed.

3.4.4 Burning

Burning will not be allowed on the project site unless specified in other sections of the specifications or authorized in writing by the Contracting Officer. The specific time, location, and manner of burning shall be subject to approval. The Contractor shall be responsible for obtaining any Federal, State, or local permits required to burn, and adhere to all applicable ordinances.

3.4.5 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal, State, and/or local allowable limits at all times.

3.4.6 Monitoring Air Quality

Monitoring of air quality shall be the responsibility of the Contractor. The Contractor shall monitor all air areas affected by the construction activities.

3.5 WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.5.1 Disposal Areas

There are no disposal areas designated for this contract. All debris shall either be removed from the site of the work, or shall be disposed of by burning. Compliance with all Federal, State, and local laws and ordinances is compulsory.

3.5.2 Temporary Excavation and Embankments

Temporary excavation and embankments shall be controlled to protect adjacent areas from contamination.

3.5.3 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with non-hazardous solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill or other state permitted facilities shall be the minimum acceptable off-site landfill for disposal of putrescible non-hazardous waste. Other permitted disposal facilities shall be considered according to the type of waste generated. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate.

3.5.4 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.5.5 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storing, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off Government property within 30 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the Contractor's responsibility.

3.5.6 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored

in marked corrosion-resistant containers and recycled or disposed of in accordance with 40 CFR 279, State, and local laws and regulations. Storage of fuel on the project site shall be accordance with all Federal, State, and local laws and regulations.

3.5.7 Waste Water

Disposal of waste water shall be as specified below.

a. Waste water from construction activities, such as on-site material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, etc. shall not be allowed to enter water ways or to be discharged prior to being treated to remove pollutants. The Contractor shall dispose of the construction related waste water off Government property in accordance with all Federal, State, Regional and local laws and regulations.

3.6 REPORTING OF POLLUTION SPILls

In the event that any oil spill or chemical release of reportable quantity occurs during the performance of this contract, the Contractor is required to contact the National Response Center, telephone number 1-800-424-8802 as soon as possible. The Contractor shall comply with any instructions from the responding agency concerning containment and/or cleanup of the spill.

3.7 WASTE MINIMIZATION AND RECYCLING

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.8 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. This does not include disposal of earthen materials or vegatation. The Contractor shall submit, on the Contractor Quality Control Report, the following information on the first working day after non-hazardous solid waste has been generated.

a. Construction and Demolition (C&D) Debris Disposed = _____ in cubic yards or tons, as appropriate.

b. Construction and Demolition (C&D) Debris Recycled = _____ in cubic yards or tons, as appropriate.

c. Total C&D Debris Generated = _____ in cubic yards or tons, as appropriate.

d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = _____ in cubic yards or tons, as appropriate.

3.9 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Contracting Officer. Cultural information is confidential and shall not be shared with the general public. The Contractor shall protect these resources and shall be

responsible for their preservation during the life of the Contract. If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock alignments, pavings, walls, or other constructed features; and any indication of historic agricultural or other human activities. Upon such findings, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.10 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.11 INTEGRATED PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, the Contractor, through the Contracting Officer, shall coordinate with the Project Pesticide Coordinator (PPC) at the earliest possible time prior to pesticide application. The Contractor shall discuss integrated pest management strategies with the IPMC and/or the PPC, and receive concurrence from the IPMC and/or the PPC through the COR prior to the application of any pesticide associated with these specifications. Pest Management personnel shall be given the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.11.1 Pesticide Delivery and Storage

Pesticides shall be delivered to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Pesticides shall be stored according to manufacturer's instructions and under lock and key when unattended.

3.11.2 Qualifications

For the application of pesticides, the Contractor shall use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.11.3 Pesticide Handling Requirements

The Contractor shall formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and shall use the clothing and personal protective equipment specified on the labeling for

use during all phases of the application. Material Safety Data Sheets (MSDS)shall be available for all pesticide products.

3.11.4 Application

Pesticides shall be applied by a State Certified Pesticide Applicator in accordance with EPA label restrictions and recommendation. The Certified Applicator shall wear clothing and personal protective equipment as specified on the pesticide label. Water used for formulating shall only come from locations designated by the Contracting Officer. The Contractor shall not allow the equipment to overflow. Prior to application of pesticide, all equipment shall be inspected for leaks, clogging, wear, or damage and shall be repaired prior to being used.

3.12 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.13 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.14 MILITARY MUNITIONS

In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260, the Contractor shall immediately stop work in that area and immediately inform the Contracting Officer.

3.15 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.16 INSPECTION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the Contractor's Environmental Protection Plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective actions and take such actions as may be approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective actions have been taken. No time extensions will

be granted or costs or damages allowed to the Contractor for any such suspension.

3.17 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with the plans submitted for approval by the Contracting Officer. The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

3.18 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore all landscape features damaged or destroyed during construction operations both inside and outside of the limits of the approved work areas. Such restoration shall be in accordance with the plans submitted for approval by the Contracting Officer.

-- End of Section --

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STORM WATER POLLUTION PREVENTION PLAN
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CAIRO SLOPE FLATTENING
STORM WATER POLLUTION PREVENTION PLAN
FOR STORM WATER GENERAL PERMIT
U.S. ARMY CORPS OF ENGINEERS, MEMPHIS DISTRICT

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 4439	(2004) Geosynthetics
ASTM D 4491	(1999; R 2004e1) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(2004) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 2003) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(2004) Determining Apparent Opening Size of a Geotextile
ASTM D 4873	(2002) Identification, Storage, and Handling of Geosynthetic Rolls and Samples

1.2 GENERAL

The Contractor shall implement the storm water pollution prevention plan as specified in this section in a manner which will meet the requirements of Section 01 57 20.00 11 ENVIRONMENTAL PROTECTION and the requirements of the National Pollution Discharge Elimination System (NPDES) permit.

1.3 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-05 Design Data

Construction Vehicle Wash-Down Rack; G

SD-07 Certificates

Mill Certificate or Affidavit; G

Certificate attesting that the Contractor has met all specified requirements.

1.4 EROSION AND SEDIMENT CONTROls

The controls and measures required by the Contractor are described below.

1.4.1 Stabilization Practices

The stabilization practices to be implemented shall include check dams, erosion control berms, silt fences, temporary seeding, mulching, off-site tracking of sediment, etc. On his daily CQC Report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing and grubbing, excavation, embankment, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Where construction activities have temporarily or permanently ceased, except as provided in paragraphs UNSUITABLE CONDITIONS and NO ACTIVITY FOR LESS THAN 21 DAYS, stabilization practices shall be initiated within 14 days.

1.4.1.1 Unsuitable Conditions

Where the initiation of stabilization measures is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable (at least by the 14th day) after conditions become suitable.

1.4.1.2 No Activity for Less Than 21 Days

Where construction activity will resume on a portion of the site within 21 days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 days), then stabilization practices do not have to be initiated on that portion of the site by the fourteenth day after construction activity temporarily ceased.

PART 2 LOCATION AND NATURE OF ACTIVITY

The Contractor shall implement and diligently pursue all measures required by the Storm Water Pollution Prevention Plan (SWPPP). The purpose of the SWPPP is to control soil erosion and the resulting sediment to the extent necessary to prevent sediment from leaving the contract rights-of-way and prevent pollution of any water body caused by the runoff from the areas of construction activities under this contract. The Contractor shall review the SWPPP to determine requirements for compliance. In addition, the Contractor shall ascertain that his subcontractors have reviewed the plan, and that they comply with its provisions. The Contractor shall ensure that all subcontractors sign the appropriate certification form(s) located at the end of this section.

This project consists of placing embankment, clearing and grubbing, and gravel re-surfacing, between STA M13 4+00 and STA m18 32+00 in ALEXANDER County, IL. The project site is north of Cairo, IL. The purpose of the project is to flatten the riverside levee slope and widen the levee crown to make the levee safer during highwater events. This will be accomplished

by placing embankment material on top of the existing riverside levee slope and grading the material to acceptable slope. Access to the project will be from Illinois HWY 3. A set of construction drawings showing the project location, details of the levee restoration, and the details of installation of the environmental protection measures will be located on the construction site at all times.

PART 3 AREA AFFECTED

The total area of the site, within the right-of-way limits, is approximately 240 acres, of which 88 acres may be disturbed during construction.

PART 4 CONTROL OF POLLUTANTS DURING CONSTRUCTION

Non-structural and/or structural measures shall be identified and constructed in a timely manner to minimize the introduction of sediment into the MIssissippi River as a result of storm water runoff. Controls shall be put in place prior to disturbance of soil and maintained until soi ls are stabilized.

4.1 NON-STRUCTURAL MEASURES

4.1.1 General

Prior to the beginning of any construction, the Contracting Officer will identify all land resources to be preserved within the right-of-way. The Contractor shall provide effective protection for land, water and vegetation resources at all times. The Contractor shall construct or install temporary and/or permanent erosion and sedimentation control features as indicated herein, and as shown on the plans, to minimize pollutants entering the Mississippi River, other water bodies, or wetlands. The Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms outside the construction right-of-way and in areas designated not to be disturbed on the construction drawings. Trees, shrubs, vines, grasses, landforms and other landscape features indicated and defined on the contract drawings or as directed by the Contracting Officer to be preserved shall be clearly identified by marking, fencing, wrapping with boards, or other approved techniques

4.1.2 Reduction of Exposure of Unprotected Erodible Soils

All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Vegetative ground cover shall not be destroyed, removed or disturbed more than 20 calendar days prior to grading or earth moving. Clearing shall progress in reasonably sized increments as needed to use the areas developed. To the extent feasible, material embankments, side slopes, back slopes, berms and any other exposed surfaces shall be stabilized by temporary seeding, mulching, fabric mats or other approved stabilization methods, as soon as possible after material placement, or within 14 days on areas that will remain unfinished more than 21 calendar days. Should construction be halted, for any reason, temporarily or permanently, for more than 21 days, in any portion of the site, temporary or permanent turfing measures, or other approved temporary stabilization of exposed areas, such as mulching, shall be accomplished within 14 days after construction is halted.

4.1.3 Disturbed Area Stabilization with Mulch

The Contractor shall apply hay, straw, mulch, plant residues, or other suitable materials, produced on the site if possible, to any disturbed areas. Mulch shall be used to promote vegetation germination and growth during a vegetative stabilization practice and as a temporary stabilization measure on its own where seed may not germinate due to temporary conditions. Mulch can be used as an erosion control device for up to six months, but it shall be applied at the appropriate depth (depending on the material used), anchored, and have a continuous 95% cover or greater of the soil surface. Mulch shall be applied when seeding for vegetation stabilization. It significantly assists germination by protecting the seed from birds, by holding moisture at the surface of the soil, and by reducing soil surface temperature. Mulch applied to seeded areas shall achieve 75% soil cover.

4.1.3.1 Installation of Mulch

The Contractor shall grade to enable the use of equipment for applying and anchoring mulch; install best management practices as required such as diversions, terraces, and/or sediment barriers; and loosen compacted soil to a minimum depth of 4 inches if using mulch while seeding. Dry straw or hay shall be applied at a rate that provides 95% or greater soil coverage. Wood waste (chips, sawdust or bark) shall be applied at a rate that provides 95% or greater soil coverage. Organic material from the clearing stage development should remain on site, be chipped, and applied as mulch. This method should not be used in conjunction with seeding due to soil acidification and nitrogen reduction problems that the decomposition of the "green" material will produce. Anchor straw or hay mulch immediately after application by one of the following methods:

a. Emulsified asphalt can be (1) sprayed uniformly onto the mulch as it is ejected from the blower machine or (2) sprayed on the mulch immediately following mulch application when straw or hay is spread by methods other than special blower equipment. The combination of asphalt emulsion and water shall consist of a homogeneous mixture satisfactory for spraying. The mixture shall consist of 100 gallons of emulsified asphalt and 100 gallons of water per ton of mulch. Care shall be taken at all times to protect state waters, the public, adjacent property, pavements, curbs, sidewalks, and all other structures from asphalt discoloration.

b. Hay and straw mulch may be pressed into the soil immediately after the mulch is spread. A special "crimper" or disk harrow with the disks set straight may be used. Serrated discs are preferred and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch should not be plowed into the soil.

c. Synthetic tackifiers or binders may be applied in conjunction with or immediately after the mulch is spread. Synthetic tackifiers should be mixed and applied according to manufacturer's specifications.

4.1.3.2 Maintenance of Mulch

Mulch shall be inspected in accordance with the paragraph entitled INSPECTIONS. Close attention shall be paid to areas needing repair, and that repair shall be accomplished promptly. Inspection of the application

shall be performed along with other regularly scheduled erosion and sediment control inspections. Any areas that have washed out due to high storm water flows shall be reconsidered for different BMP use, or at least retreated. Areas that have been disturbed by blowing wind shall be retreated. Inspections of mulched areas shall be made before anticipated storm events and within 24 hours after the end of a storm event of 0.5 inches or greater, and at least once every fourteen calendar days. Mulch inspections should identify washed out areas, and additional areas needing attention. Maintenance needs identified in inspections or by other means shall be accomplished before the next storm event if possible, but in no case more than seven days after the need is identified.

4.2 STRUCTURAL MEASURES

4.2.1 General

Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Temporary erosion and sediment control measures such as silt fences, erosion control berms, check dams, and sedimentation basins shall be constructed and maintained until permanent drainage and erosion control facilities are complete and operative. Placement of perimeter controls shall commence with initiation of construction and shall remain in effect during the remainder of construction until final stabilization of those portions of the site upward of the perimeter control. Temporary erosion controls shall be maintained until final stabilization of exposed areas, after which they shall be removed. All structural devices shall be constructed in accordance with the standard drawing, TEMPORARY EROSION CONTROL DEVICES. The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures.

4.2.2 Silt Fences

Silt fences shall be constructed as a temporary structural measure to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the drawings. All necessary efforts shall be employed to minimize the entry of excavated material into the Mississippi River, other water bodies, or wetlands. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. Sediment removal shall include removal and disposition in a location where it will not erode into construction areas, watercourses or wetlands. When a silt fence is no longer required, it shall be removed. Final removal of silt fence barriers shall be upon approval by the Contracting Officer. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in

accordance with the paragraph ESTABLISHMENT OF TURF.

4.2.2.1 Components for Silt Fences

a. Filter Fabric

The filter fabric shall comply with the requirements of ASTM D 4439, and shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 to 120 degrees F. The filter fabric shall meet the following requirements:

FILTER FABRIC FOR SILT FENCE

PHYSICAL PROPERTY	TEST PROCEDURE	STRENGTH REQUIREMENT
Grab Tensile	ASTM D 4632	100 lbs. min.
Elongation (%)		30 % max.
Trapezoid Tear	ASTM D 4533	55 lbs. min.
Permittivity	ASTM D 4491	0.2 sec-1
AOS (U.S. Std Sieve)	ASTM D 4751	20-100

b. Silt Fence Stakes and Posts

The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction shall have a minimum cross section of 2 inches by 2 inches when oak is used and 4 inches by 4 inches when pine is used, and shall have a minimum length of 5 feet. Steel posts (standard "U" or "T" section) utilized for silt fence construction shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 5 feet.

c. Mill Certificate or Affidavit

A mill certificate or affidavit shall be provided attesting that the fabric and factory seams meet chemical, physical, and manufacturing requirements specified above. The mill certificate or affidavit shall specify the actual Minimum Average Roll Values and shall identify the fabric supplied by roll identification numbers. The Contractor shall submit a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the filter fabric.

d. Identification Storage and Handling

Filter fabric shall be identified, stored and handled in accordance with ASTM D 4873.

4.2.2.2 Installation of Silt Fences

Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 4 inches wide and 4 inches deep on the upslope side of the location of the silt fence. The 4-inch by 4-inch trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the Contracting Officer.

4.2.2.3 Maintenance of Silt Fences

Silt fences shall be inspected in accordance with the paragraph entitled INSPECTIONS. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. When a silt fence is no longer required, it shall be removed. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with the paragraph ESTABLISHMENT OF TURF below.

4.2.3 Erosion Control Berms

Erosion control berms shall be constructed as a temporary structural measure to minimize erosion and sediment runoff. All necessary efforts shall be employed to minimize the entry of excavated material into the Mississippi River, other water bodies, or wetlands. Soil shall be placed along toe of slope to effectively retain sediment immediately after completing each phase of work (e.g., clearing and grubbing, excavation, embankment, grading) in each independent runoff area. The erosion control berms shall be erected as work progresses. Erosion control berms shall be adequately compacted to prevent failure. The minimum height measured from the top of the berm to the ground shall be 1 foot. The minimum base width shall be 4 feet and the minimum top width shall be 1 foot. The Contractor shall ensure that the erosion control berms are not damaged by construction operations or traffic. Erosion control berms shall be removed as needed for work to progress in the drainage area. Final removal of erosion control berms shall be upon approval by the Contracting Officer. Upon final removal of the erosion control berms, the berms shall be degraded to match the existing slopes of the adjacent land. The areas disturbed by this shaping shall be seeded in accordance with the paragraph ESTABLISHMENT OF TURF below. In the event that the erosion control berms begin to erode into the channel, the Contractor shall take action on the day that the erosion is noted, and protect the drainage area by installing straw bales at such locations as are necessary.

4.2.3.1 Installation of Erosion Control Berms

The erosion control berm shall be constructed to the lines and grades as indicated in the paragraph entitled EROSION CONTROL BERM above; however, a tolerance of two-tenths of one foot above or below the prescribed grade and section will be allowed unless otherwise directed by the Contracting Officer. At no time shall there be any abrupt humps or depressions in the

surface of the berm. No brush, tree roots, sod or other objectionable material shall be placed in the berm. The Contractor shall remove any material that the Contracting Officer considers to be objectionable. Holes shall be backfilled with suitable material compacted to the density of the adjoining berm. The berm shall be placed in layers not to exceed one foot. It is intended that the fill material shall be placed in the embankment at its natural moisture content. Each layer of permanent embankment placed shall be compacted as site conditions require to prevent failure of the berm. Within 14 days following the placement of the erosion control berm, the berm shall be seeded in accordance with the paragraph ESTABLISHMENT OF TURF below.

4.2.3.2 Maintenance of Erosion Control Berms

Erosion control berms shall be inspected in accordance with the paragraph entitled INSPECTIONS. Close attention shall be paid to the repair of damaged erosion control berms and necessary repairs shall be accomplished promptly. When erosion control berms are no longer required, they shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with the paragraph ESTABLISHMENT OF TURF below. In the event that the erosion control berms begin to erode into the channel, the Contractor shall take action on the day that the erosion is noted, and protect the channel by installing straw bales at such locations as are necessary.

4.2.4 Check Dams

The Contractor shall provide check dams made of sand bags and/or straw bales as a temporary structural measure to minimize erosion and sediment runoff. Check dams are small temporary dams constructed across a swale or drainage ditch to reduce the velocity of runoff flows. Check dams shall be installed to effectively retain sediment immediately after completing each phase of work in each independent runoff area. Check dams shall be placed as work progresses, and shall be removed/replaced/relocated as needed for work to progress in the drainage area. Check dams shall be constructed as needed across inlet ditches, drains and swales using baled straw or equivalent devices to minimize sediment entry into local drainage ditches and low lying areas, other water bodies, or wetlands. Check dams shall be provided perpendicular to the flow in the bottom of existing and new drainage ditches, channels, swales, etc. that traverse disturbed areas or carry runoff from disturbed areas. Check dams shall be inspected for sediment accumulation after each significant rainfall and sediment deposits shall be removed when deposits reach one-third of the height of the barrier. Sediment removal shall include removal and disposition in a location where it will not erode into construction areas, watercourses or wetlands. Close attention shall be paid to the repair of damaged bales or bags, end runs and undercutting. Necessary repairs to barriers or replacement shall be accomplished promptly. Barrier rows used to retain sediment shall be turned uphill at each end of each row. When a check dam is no longer required, it shall be removed. Final removal of the check dams shall be upon approval by the Contracting Officer. The immediate area occupied by the check dam and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with the paragraph ESTABLISHMENT OF TURF below.

4.2.4.1 Installation of Check Dams

Check dams shall be installed to effectively retain sediment. Check dams shall be provided perpendicular to the flow in the bottom of existing and

new drainage ditches, channels, swales, etc. that traverse disturbed areas or carry runoff from disturbed areas. Check dam rows shall be spaced a maximum of 200 feet apart when slopes are equal to or less than 5 percent and 100 feet apart when slopes are steeper than 5 percent.

a. Check Dams Constructed of Straw Bales

Check dams shall be placed in a single row with ends of adjacent bales tightly abutting one another lengthwise. At the end of each row, two straw bales shall be turned uphill to retain sediment. Straw bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales in order to prevent deterioration of the bindings. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked (2 per bale) and chinked (gaps filled by wedging with straw), the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier. Loose straw shall be scattered over the area immediately uphill from a straw bale barrier to increase barrier efficiency. Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake or steel post in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or steel pickets shall be driven a minimum 18 inches deep into the ground to securely anchor the bales.

b. Check Dams Constructed of Sand Bags

The number and arrangement of sand bags may vary with on-site conditions; however, check dams shall be placed with ends of adjacent sand bags tightly abutting one another lengthwise. When a second vertical row of sand bags is warranted, they shall be installed in such a way that the joints overlap. At the end of each row, a group of sand bags shall be turned uphill to retain sediment. The sand bag barrier shall be entrenched and backfilled. A trench shall be excavated the width of a sand bag and the length of the proposed barrier to a minimum depth of 4 inches. After the sand bags are in place, the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier.

4.2.4.2 Maintenance of Check Dams

Check dam barriers shall be inspected in accordance with the paragraph entitled INSPECTIONS. Close attention shall be paid to the repair of damaged bales or bags, end runs and undercutting. Necessary repairs to barriers or replacement shall be accomplished promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. Barrier rows used to retain sediment shall be turned uphill at each end of each row. When a check dam is no longer required, it shall be removed, with approval of the Contracting Officer. The immediate area occupied by the check dam and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with the paragraph ESTABLISHMENT OF TURF below.

4.2.5 Other Measures

Other temporary erosion and sediment control measures such as dikes,

swales, and drains may be used with, or in lieu of, the above-mentioned measures provided they are consistent with Best Management Practices (BMPs). They shall be maintained until permanent drainage and erosion control facilities are complete and operative. Earthen erosion control features shall be compacted and stabilized immediately with vegetation in accordance with the paragraph ESTABLISHMENT OF TURF below.

4.2.6 Velocity Dissipation Devices

Should drains or swales be used, they shall be constructed with velocity dissipation devices (check dams) to reduce the need for more stringent erosion control practices in the swale or drain. These devices shall be removed after the erosive areas have been stabilized.

4.2.7 Off-site Tracking of Sediment

Off-site tracking of sediment will be minimized by having most of the construction equipment delivered to and removed from the worksite by trailer. Locations where vehicles enter or exit the worksite shall be inspected to minimize off-site tracking of sediment. A construction entrance/exit shall be constructed as shown on the drawings to prevent off-site tracking of sediment.

PART 5 CONTROL OF POLLUTANTS AFTER CONSTRUCTION

5.1 ESTABLISHMENT OF TURF

5.1.1 General

Turf shall be established as a permanent erosion control measure along any areas which are disturbed during construction, except where other erosion control mearsures are specified. All material embankments, all berm areas, and any other disturbed areas shall be turfed. Turf shall be established in accordance with Section 32 92 32.00 11 ESTABLISHMENT OF TURF.

5.2 STATE AND LOCAL CONTROls

There are no known State or local erosion and sediment control requirements applicable to this work other than those met by the requirements of this permit. In the event that there are State or local erosion and sediment control requirements, it shall be the responsibility of the Contractor to identify and comply with all applicable requirements. Chemical and solid waste units shall be used at the site, with disposal in accordance with State and local regulations. Measures shall be in place to ensure compliance with State and local waste disposal, sanitary sewer, or septic system regulations. Water Quality Standards of receiving streams shall be maintained during and after construction in accordance with requirements of the State Water Quality Certification.

PART 6 RUNOFF COEFFICIENT, IMPERVIOUS AREAS, SOIls

The Rational Method runoff coefficient immediately prior to construction is estimated to range between 0.10 and 0.30. Once the material embankment and other disturbed areas have been re-vegetated, the runoff coefficient should remain in approximately the same range with no increase in impervious areas. Soils in the area are a fat clay material and/or a lean clay material. For further information regarding soil borings contact the Memphis District Office of the U.S. Army Corps of Engineers.

PART 7 RECEIVING WATER

The receiving water is the Mississippi River in Alexander County, IL. However, there is a large buffer area between the Mississippi River and the project site for the entire project area measuring approximately 500 feet or more. There are no TMDls applicable for the immediate receiving waters and since control measures will be in place to minimize sediment discharge, the impact upon the ultimate receiving stream will be negligible. No non-storm water discharges are anticipated to be combined with storm water runoff.

PART 8 INSPECTIONS

8.1 GENERAL

The Contractor's Quality Control Representative shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days. The site shall also be inspected within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, inspections shall be conducted at least once every month.

8.2 DISTURBED AREAS AND AREAS USED FOR MATERIAL STORAGE

Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure correct operation. Discharge locations or discharge points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impact to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking. Construction entrance/exits shall be used to minimize off-site tracking of sediment.

8.3 MODIFICATION OF POLLUTION PLAN

Based on the results of the inspection referenced in the paragraph entitled DISTURBED AREAS AND AREAS USED FOR MATERIAL STORAGE, the site description identified in Part 1 and Part 2 of this plan shall be revised as appropriate, but in no case more than seven calendar days following the inspection. Such modification shall provide for timely implementation of any changes to the plan within seven calendar days following the inspection.

8.4 REPORTS

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP, maintenance performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's Daily CQC REPORT. A copy of the inspection report shall be maintained on the job site. Further, the Contracting Officer shall retain a copy of the report for at least three years from the date the site is finally stabilized.

PART 9 OTHER CONSIDERATIONS

9.1 LOCATION OF CONSTRUCTION IN REGARD TO WATERS CLASSIFIED IN 10 CSR 20-7.013

Construction is not within 1,000 feet of waters classified in 10 CSR 20-7.013, Water Quality Standards, as:

a. Public drinking water supply lakes
b. Outstanding National Resource Waters
c. Outstanding State Resource Waters
d. Streams designated for cold water sport fishery
e. A lake in EPA's Clean Lakes Program

9.2 PROXIMITY OF SITE TO MAJOR RESERVOIRS

Construction is not within 100 feet of waters classified as major reservoirs.

PART 10 DEFINITIONS

10.1 BEST MANAGEMENT PRACTICES (BMPs)

Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operation procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

10.2 COMMENCEMENT OF CONSTRUCTION

The initial disturbance of soils associated with clearing and grubbing, or other construction activities.

10.3 DRAINAGE SWALE

A drainage way with a lining of grass, riprap, asphalt, concrete, or other material installed to convey runoff without causing erosion.

10.4 FINAL STABILIZATION

All soil-disturbing activities at the site have been completed, and a uniform perennial vegetative cover with a density of 85 percent of the cover for the area has been established or equivalent stabilization measures (such as the use of mulches or geo-textiles) have been employed.

PART 11 CERTIFICATIONS

SWPPP COE CERTIFICATION:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Thomas L. Minyard, P.E. (901) 544-3227
Chief, Engineering and Construction Division, COE

Name & Official Title Phone No.

Signature Date Signed

SWPPP CONTRACTOR AND SUBCONTRACTOR CERTIFICATION:

The general contractor and/or subcontractors that will implement the pollutant control measures described in this SWPPP must be identified below. Each must sign a statement certifying that they understand the NPDES general permit authorizing storm water discharges during construction. These statements must be maintained in the SWPPP file on site.

Site Information:

Project Name:

_____

Project Address:

_____

Contractor implementing the SWPPP:

Business Name:

_____

Business Address:

_____

Business Telephone:

_____

Certification: (Note signature requirements in Part VI.G. of the NPDES General Permit.)

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit the authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

_____

Name & Official Title of Contractor Phone No.

_____ _____

Signature Date Signed

_____

Name & Official Title of Subcontractor Phone No.

_____ _____

Signature Date Signed

Certification must be signed prior to construction activities on site

SWPPP SITE INSPECTOR CERTIFICATION:

I certify under penalty of law that I am knowledgeable in the principles of erosion and sediment control, possess the skills to evaluate conditions at the above construction site that could impact stormwater quality, and am knowledgeable in the correct installation of erosion and sediment controls. I am able to assess the effectiveness of any sediment and erosion control measures selected in the SWPPP to control the quality of stormwater discharges from the above construction site. Additionally, I certify that I have reviewed the Illinois Stormwater Construction General Permit and SWPPP which was prepared by the owner of this site.

_____

Printed Name of Site Inspector

_____

Signature and Date

Certification must be signed prior to construction activities on site

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

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PROJECT SIGNS

01/10/08

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PROJECT SIGNS
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PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing, erecting, maintaining, and removing the project sign.

1.2 PROJECT SIGN

The Contractor shall furnish, erect, and maintain three double-faced project signs at the designated locations, specified by the Contracting Officer. The signs shall be constructed of 3/4-inch marine-grade plywood or 22 gage metal, mounted on a substantial framework of two-inch material. Size, lettering, color and paint shall conform to the details shown on the drawing "Temporary Project Sign" which can be found at http://www.mvm.usace.army.mil/contracting/forms/forms.htm Upon request, the Government will furnish without cost to the Contractor six decals of the Engineer Castle. The signs shall be erected as soon as practicable, but not later than 15 calendar days after the date established for commencement of work. The signs shall be removed upon completion of all construction work under the contract, and the signs will become the property of the Contractor.

1.3 PAYMENT

No separate payment will be made for erecting, maintaining or removing the project signs. All costs, in connection therewith, shall be considered an incidental obligation of the Contractor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

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GEOTEXTILE

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SECTION 31 05 19

GEOTEXTILE
08/08

PART 1 GENERAL

1.1 MEASUREMENT

Measure the as-built surface area, covered by geotextile, in square yards. Allowance will be made for geotextile in anchor and/or drainage trenches but no allowance will be made for waste, overlaps, damaged materials, repairs, or materials used for the convenience of the Contractor.

1.2 PAYMENT

Geotextile installed and accepted will be paid for at the respective contract unit price in the bidding schedule. This unit price will include the cost of materials, equipment, installation, testing, and other costs associated with placement of the geotextile.

1.3 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D4354	(2012) Sampling of Geosynthetics for Testing
ASTM D4759	(2011) Determining the Specification Conformance of Geosynthetics
ASTM D4873	(2002; R 2009) Identification, Storage, and Handling of Geosynthetic Rolls and Samples

1.4 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Thread
Manufacturing Quality Control Sampling and Testing

SD-04 Samples

Quality Assurance Samples and Tests

SD-07 Certificates

Geotextile

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver, store, and handle geotextile in accordance with ASTM D4873.

1.5.1 Delivery

Notify the Contracting Officer a minimum of 24 hours prior to delivery and unloading of geotextile rolls packaged in an opaque, waterproof, protective plastic wrapping. The plastic wrapping shall not be removed until deployment. If quality assurance samples are collected, immediately rewrap rolls with the plastic wrapping. Geotextile or plastic wrapping damaged during storage or handling shall be repaired or replaced, as directed. Label each roll with the manufacturer's name, geotextile type, roll number, roll dimensions (length, width, gross weight), and date manufactured.

1.5.2 Storage

Protect rolls of geotextile from construction equipment, chemicals, sparks and flames, temperatures in excess of 160 degrees F, or any other environmental condition that may damage the physical properties of the geotextile. To protect geotextile from becoming saturated, either elevate rolls off the ground or place them on a sacrificial sheet of plastic in an area where water will not accumulate.

1.5.3 Handling

Handle and unload geotextile rolls with load carrying straps, a fork lift with a stinger bar, or an axial bar assembly. Rolls shall not be dragged along the ground, lifted by one end, or dropped to the ground.

PART 2 PRODUCTS

2.1 RAW MATERIAls

A minimum of 7 days prior to scheduled use, submit manufacturer's certificate of compliance stating that the geotextile meets the requirements of this section. For needle punched geotextiles, the manufacturer shall also certify that the geotextile has been continuously inspected using permanent on-line full-width metal detectors and does not contain any needles which could damage other geosynthetic layers. The certificate of compliance shall be attested to by a person having legal authority to bind the geotextile manufacturer.

2.1.1 Geotextile

Provide geotextile that is a nonwoven pervious sheet of polymeric material consisting of long-chain synthetic polymers composed of at least 95 percent by weight polyolefins, polyesters, or polyamides. The use of woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) will not be allowed. Add stabilizers and/or inhibitors to the base polymer, as needed, to make the filaments resistant to deterioration by ultraviolet light, oxidation, and heat exposure. Regrind material, which consists of edge trimmings and other scraps that have never reached the consumer, may be used to produce the geotextile. Post-consumer recycled material may also be used. Geotextile shall be formed into a

network such that the filaments or yarns retain dimensional stability relative to each other, including the edges.

2.1.2 Thread

A minimum of 7 days prior to scheduled use, submit proposed thread type for sewn seams along with data sheets showing the physical properties of the thread. Construct sewn seams with high-strength polyester, nylon, or other approved thread type. Thread shall have ultraviolet light stability equivalent to the geotextile and the color shall contrast with the geotextile.

2.2 MANUFACTURING QUALITY CONTROL SAMPLING AND TESTING

The Manufacturer is responsible for establishing and maintaining a quality control program to assure compliance with the requirements of the specification. A minimum of 7 days prior to scheduled use, submit manufacturer's quality control manual. Documentation describing the quality control program shall be made available upon request. Perform manufacturing quality control sampling and testing in accordance with the manufacturer's approved quality control manual. As a minimum, geotextiles shall be randomly sampled for testing in accordance with ASTM D4354, Procedure A. Acceptance of geotextile shall be in accordance with ASTM D4759. Tests not meeting the specified requirements will result in the rejection of applicable rolls.

PART 3 EXECUTION

3.1 QUALITY ASSURANCE SAMPLES AND TESTS

3.1.1 Quality Assurance Samples

Provide assistance to the Contracting Officer in the collection of quality assurance samples for quality assurance testing; assign 7 days in the schedule to allow for testing. Collect samples upon delivery to the site at the request of the Contracting Officer. Identify samples with a waterproof marker by manufacturer's name, product identification, lot number, roll number, and machine direction. The date and a unique sample number shall also be noted on the sample. Discard the outer layer of the geotextile roll prior to sampling a roll. Samples shall then be collected by cutting the full-width of the geotextile sheet a minimum of 3 feet long in the machine direction. Rolls which are sampled shall be immediately resealed in their protective covering.

3.2 INSTALLATION

3.2.1 Subgrade Preparation

The surface underlying the geotextile shall be smooth and free of ruts or protrusions which could damage the geotextile. Subgrade materials and compaction requirements shall be in accordance with Section 31 24 00.00 12 EMBANKMENT.

3.2.2 Placement

Notify the Contracting Officer a minimum of 24 hours prior to installation of geotextile. Geotextile rolls which are damaged or contain imperfections shall be repaired or replaced as directed. The geotextile shall be laid flat and smooth so that it is in direct contact with the subgrade. The

geotextile shall also be free of tensile stresses, folds, and wrinkles. On slopes steeper than 10 horizontal on 1 vertical, lay the geotextile with the machine direction of the fabric parallel to the slope direction.

3.3 SEAMS

3.3.1 Overlap Seams

Continuously overlap geotextile panels a minimum of 24 inches at all longitudinal and transverse joints. Where seams must be oriented across the slope, lap the upper panel over the lower panel.

3.4 PROTECTION

Protect the geotextile during installation from clogging, tears, and other damage. Damaged geotextile shall be repaired or replaced as directed. Use adequate ballast (e.g. sand bags) to prevent uplift by wind. The geotextile shall not be left uncovered for more than 5 days after installation.

3.5 REPAIRS

Repair torn or damaged geotextile. Clogged areas of geotextile shall be removed. Perform repairs by placing a patch of the same type of geotextile over the damaged area. The patch shall extend a minimum of 12 inches beyond the edge of the damaged area. Patches shall be continuously fastened using approved methods. The machine direction of the patch shall be aligned with the machine direction of the geotextile being repaired. Remove and replace geotextile rolls which cannot be repaired. Repairs shall be performed at no additional cost to the Government

3.6 PENETRATIONS

Construct engineered penetrations of the geotextile by methods recommended by the geotextile manufacturer.

3.7 COVERING

Do not cover geotextile prior to inspection and approval by the Contracting Officer. Place gravel in a manner that prevents gravel from entering the geotextile overlap zone, prevents tensile stress from being mobilized in the geotextile, and prevents wrinkles from folding over onto themselves. Gravel shall not be dropped onto the geotextile from a height greater than 3 feet. No equipment shall be operated directly on top of the geotextile without approval of the Contracting Officer. Equipment placing gravel shall not stop abruptly, make sharp turns, spin their wheels, or travel at speeds exceeding 5 mph while on top or uncovered geotextile. Upon completion of the covering gravel, no geotextile shall be seen protruding from beneath the gravel.

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CLEARING

1/10/08

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SECTION 31 11 00.00 11

CLEARING
1/10/08

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, materials, equipment, and performing all work in strict accordance with the specifications, schedules, and drawings in connections with the slope flattening, including disposition of material generated by this work.

1.2 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-04 Samples

Tree wound paint

Herbicide

Submit samples in cans with manufacturer's label.

1.3 DELIVERY, STORAGE, AND HANDLING

Deliver materials to, store at the site, and handle in a manner which will maintain the materials in their original manufactured or fabricated condition until ready for use.

1.4 QUALITY CONTROL

The Contractor shall establish and maintain quality control for all clearing operations to assure compliance with contract requirements, and shall maintain records of his quality control for all construction operations, including but not limited to the following:

(1) Limits of clearing including location and heights.

(2) Quality and completeness of clearing.

(3) Proper disposition of clearing material. If applicable, method and location of burning.

(4) Method for prevention of fire damage to standing timber and improvements.

(5) Grubbing location, limits, depths, refill of holes and compaction.

A copy of the inspection and tests, as well as the records of corrective action taken, shall be furnished the Government.

PART 2 PRODUCTS

2.1 TREE WOUND PAINT

Bituminous based paint of standard manufacture specially formulated for tree wounds.

2.2 HERBICIDE

Comply with Federal Insecticide, Fungicide, and Rodenticide Act (Title 7 U.S.C. Section 136) for requirements on Contractor's licensing, certification and record keeping.

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 Roads and Walks

Keep roads and walks free of dirt and debris at all times.

3.1.2 Trees, Shrubs, and Existing Facilities

Trees and vegetation to be left standing shall be protected from damage incidental to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require.

3.1.3 Utility and Telecommunication Lines

Protect existing utility and telecommunication lines that are to remain in place. Notify the Contracting Officer immediately of damage to or an encounter with an unknown existing utility or telecommunication line. The Contractor shall be responsible for the repairs of damage to existing utility and telecommunication lines that are indicated or made known to the Contractor prior to start of clearing and grubbing. When utility and/or telecommunication lines, which are to be removed, are encountered within the area of operations, the Contractor shall notify the Contracting Officer in ample time to minimize interruption of the service.

3.2 CLEARING

The felling of trees shall be completed during the time frame of 1 October to 31 March. Felling of trees will not be allowed outside of those dates.

Clearing shall begin at STA M13 3+40 and proceed as needed to STA M14 25+38, and begin again at STA M15 39+68 and proceed as needed to STA M16 40+23, and begin again at STA M16 52+72 and proceed as needed to STA M18 32+21. The cleared area will measure 20 feet perpendicularly outward from the newly placed embankment toe along the entire length of the newly placed embankment toe. All clearing, other than the felling of trees, shall be maintained not more than 2,000 feet or 20 days in advance of embankment placement. Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including all growth, stumps, downed timber, partially buried logs, snags, brush, abandonded piling, and rubbish

occurring within the areas to be cleared. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work. Contractor will get approval from Contracting Officer before removal of any man made structures. Before clearing operations begin, the Contractor shall mark or designate all trees that are to be left standing/undisturbed. Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface.
Grubbing shall consist of the removal and disposal of stumps, tap roots, buried logs, and other projections which have a diameter larger than 1-1/2 inches in diameter. Material to be grubbed, together with logs and other debris not suitable for foundation purposes, shall be cut-off and removed to a depth of not less than 2 feet below the finished grade, or othewise completely grubbed out. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the finished adjacent surface of the ground. The grubbed area will measure 20 feet perpendicularly outward from the newly placed embankment toe along the entire length of the newly placed embankment toe. The use of explosives for removing stumps will not be permitted.

3.3 STRUCTURES

There are no structures designated for removal within the areas to be cleared. However, if structures that may need to be removed are encountered during any construction activities, the contractor shall obtain approval from the contracting officer prior to removing any such structures.

3.4 DISPOSAL OF MATERIAls

3.4.1 General

All debris resulting from clearing operations on this contract shall be disposed of by burning, and/or removal from site. The Contractor shall make a reasonable effort to channel materials of value resulting from clearing and grubbing operations into beneficial use. In no case shall cleared material be thrown into or left in adjacent ditches or rivers.

3.4.2 Burning

The Contractor shall comply with the applicable pollution restrictions of the State or States in which the work is being performed. Subject to restrictions and obtaining any permit which may be required by the applicable State(s), the Contractor may burn material within the contract area, and at any time within the contract period. After the felling operation has been completed, the timber to be burned must be piled for burning at least 14 days before embankment placement begins. The material that is to be burned shall be placed in piles for burning at locations and in such manner that it will not float into the adjacent drainage area, ponds, lakes, ditches etc. or outside of the right-of-way. Burning of cleared debris shall not be allowed at a disposal site, regardless of location, that in the judgment of the Contracting Officer poses a potential hazard to the public utility. Burning operations shall be conducted so as to prevent damage to standing timber or other flammable growth. At a minimum, burning sites shall be spaced so that no site is closer than 500 feet to any other site. No material shall be burned within 100 feet of the centerline of roads, highways, railways or standing timber, or within 25 feet of utilities. All debris resulting from burning operations, including root wads, shall be disposed of by removal from site as described in the paragraph "Removal from Site" below. The Contractor will be responsible

for any damage to life and/or property resulting from fires that are started by his employees or as a result of his operations. The Contractor shall furnish, at the site of burning operations, adequate fire fighting equipment to properly equip his personnel for fighting fires. Fires shall be guarded at all times and shall be under constant surveillance until they have been extinguished.

3.4.3 Chipping

All cut timber, down timber, dead timber, branches, and brush may be chipped. The chips may be hauled either to temporary stockpiles indicated on the drawings or to other locations approved by the Contracting Officer. The chips shall be deposited in these areas in piles. At the option of the Contractor, the chips may be either sold or spread over worksite areas as a dust preventive measure, or may be used within the project area as a mulch for plantings spread evenly over the completed embankments prior to the fertilizing and seeding operation. However, disposal by spreading shall be acceptable only in areas where the wood chips cannot be washed either into ditches or streams or off the right-of-way by rainfall runoff.

3.4.4 Removal from Site

The Contractor may remove debris from the site of the work. Inorganic materials shall be removed from the site and disposed of in compliance with all applicable Federal, State and local laws. The Contractor may, at his option retain for his own use or disposal by sale or otherwise any such materials of value. The Government assumes no responsibility for the protection or safekeeping of any materials retained by the Contractor. Such materials shall be removed from the site of the work before the date of completion of the work under this contract. The locations and manner of placement of debris on the right-of-way by the Contractor for his convenience, prior to removal of the debris from the site of the work, shall be subject to the approval of the Contracting Officer. When debris from clearing and grubbing operations is placed on adjacent property, the Contractor shall obtain, without cost to the Government, additional rights-of-way for such purpose. Such material shall be placed so as not to interfere with roads, drainage, or other improvements and in such a manner as to eliminate the possibility of it entering the adjacent drainage area, ponds, lakes, ditches etc.

3.4.5 Saleable Timber

All timber on the project site noted for clearing and grubbing shall become the property of the Contractor, and shall be removed from the project site.

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EXCAVATION

9/2010

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SECTION 31 23 00.00 12

EXCAVATION
9/2010

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for stockpiling materials, borrow pit development, unwatering, and for excavation in the borrow pit, and all other excavation incidental to the construction of embankments as specified herein or as shown on the drawings.

1.2 QUALITY CONTROL

The Contractor shall establish and maintain quality control for excavation operations to assure compliance with contract requirements, and maintain records of its quality control for all construction operations including but not limited to the following:

(1) Borrow Areas. Location, limits, actual and allowable depths, and drainage. Before and after excavation, the Contractor shall perform, plot and submit compliance cross sections to the Contracting Officer at a maximum of 100 feet intervals within the borrow areas with the theoretical sections superimposed thereon.

(2) Disposition of Materials. Testing Program, Location of tested materials (station and lift), Applicable Compaction Curves.

(3) Quantity Surveys. Perform all necessary QC surveys are record results on the As-Built drawings.

(4) Excavation plan. Submit a written exvation plan 15 days prior to the beginning of any excavation. Approval of the detailed plan shall be obtained from the Contracting Officer prior to starting the work. If necessary, the plan shall be modified as required to meet field conditions, and modifications shall be approved prior to use.

The original and two (2) copies of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished to the Government at intervals specified by the contractor officer. Format of the report shall be as prescribed in
Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 EXCAVATION IN BORROW AREAS

3.1.1 General

The Contractor shall provide the types of equipment as necessary to perform the required excavation according to the in situ conditions of the borrow area.

3.1.2 Government Furnished Borrow Areas

The rights-of-way and earth materials for constructing the work have been furnished, without cost, to the Contractor at locations specified herein and/or shown on the drawings. Borrow pit investigations were performed using industry standard techniques. The results are displayed in the drawings in the form of plotted logs and maps indicating the location of the borings for the borrow pit.

3.1.2.1 Criteria

Borrow areas shall conform to the requirements prescribed herein and as shown on the drawings. The required excavation depths in the borrow area are indicated on the drawings. Abrupt changes in grade shall be avoided. Any excavation below the depths and slopes specified herein, or shown on the drawings, shall be backfilled by the Contractor, at his/her expense, to the specified permissible excavation line, with material placed and compacted in accordance with Section 31 24 00.00 12 EMBANKMENT. The borrow areas used for embankment under this contract shall be drained and kept dry during excavation. Excavation for embankment will not be permitted in water nor shall excavated material be scraped, dragged or otherwise moved through water. Drainage of borrow areas shall be accomplished by ditching, sump pumping or other approved methods. The borrow areas used under this contract which are flooded from seep water resulting from high river stages shall be drained and allowed to dry as quickly as practicable after the high river stage has passed. Contractor will get approval from Contracting Officer before draining borrow pit after a high river stage occurs. Except as required by variable right-of-way widths, abrupt changes in borrow area alignment shall be avoided. To minimize the plan area of excavated borrow areas required, excavation shall proceed as specified on the contract drawings.
The Contractor shall submit an excavation plan for approval by the Contracting Officer and shall not begin excavation until the Contracting Officer's approval has been received. The plan shall contain, as a minimum, the following:

a. The Contractor's proposals for implementing Section 01 57 20.00 11 ENVIRONMENTAL PROTECTION insofar as that section applies to borrow areas.

b. The Contractor's proposed methods for draining and keeping the borrow areas free of water during excavation under this contract.

c. The Contractor's proposed methods for draining borrow areas excavated under this contract which may be inundated by high river stages.

d. A statement indicating whether the Contractor proposes to use:
(1) Government-furnished rights-of-way for drainage;
(2) Contractor-furnished rights-of-way for drainage; or
(3) A combination of Government-furnished and Contractor-furnished

rights-of-way for drainage.

e. For Contractor-furnished rights-of-way for drainage, the plan shall contain all of the information required by paragraph "CRITERIA" and the Contractor's proposals for implementing Section 01 57 20.00 09 ENVIRONMENTAL PROTECTION, insofar as that section applies to rights-of-way for drainage.

f. The Contractor's proposals for conserving arable land and for making optimum use of available borrow, including the Contractor's proposed methods for smoothing the bottom of the borrow areas after having completed use of the borrow areas.

3.1.2.2 Surveys

The Contractor shall take original and final compliance cross-sections of the borrow area at a maximum of 100 foot intervals and submit to the Government in accordance with paragraph "QUALITY CONTROL"(1).

3.2 HAULING

All excavated material to be hauled to the site from the borrow source, or to be removed from the site, including debris, shall be hauled in suitable trucks that prevent anything from falling off of the truck. The route for trucks carrying material to and from the job site, and to and from the borrow area shall avoid residential streets whenever possible, and shall be approved by the Contracting Officer. If the Contractor decides to modify or construct any new roads, they must be submitted to the Contracting Officer for approval. Should hauling operations damage local roads beyond what is considered normal wear and tear, the contractor will repair haul roads to pre-damaged condition (see HAUL ROADS below, paragraph (h) for instructions relating to Potts Road). Trucks shall not spill or track mud on public roads. The Contractor shall take immediate action to clean up any material spilled on the roads without notification from the Contracting Officer. Failure by the Contractor to satisfactorily clean public roads used for the hauling operation shall result in the suspension of hauling operations until such roads are cleaned to the satisfaction of the Contracting Officer.

3.3 HAUL ROADS

Haul roads between borrow areas and fill areas shall meet the minimum requirements specified herein. At no additional cost to the Government, the Contractor shall increase the minimum specified requirements as necessary, due to job site conditions, to assure safe operations. Whenever practical, one-way haul roads shall be used. Haul roads used for this work shall comply with the following:

(a) One-way haul roads for off-the-road haulage equipment; (e.g., belly dumps, scrapers, and off-the-road trucks) shall have a minimum usable width of 25 feet. One-way haul roads for over-the-road haulage equipment (e.g., dump trucks, etc.) shall have a minimum usable width of 15 feet.

When it is impractical to obtain the specified minimum widths for one-way haul roads (e.g., a road on top of a levee), a usable width of not less than 10 feet may be approved, provided a positive means of traffic control is implemented. Such positive means shall include signs, signals, or signalmen and an effective means of speed control.

(b) Two-way haul roads for off-the-road haulage equipment shall have a minimum usable width of 60 feet. Two-way haul roads for over-the-road haulage equipment shall have a minimum usable width of 30 feet.

(c) Haul roads shall be maintained to keep the surface free from potholes, ruts and similar conditions that could result in unsafe conditions. Haul roads shall be maintained free of all construction related debris, including loose riprap.

(d) Curves and changes in grade shall allow a minimum sight distance of 200 feet for one-way haul roads and 300 feet for two-way haul roads. Sight distance is defined as the centerline distance an equipment operator (4.5 feet above the road surface) can see an object 4.5 feet above the road surface. When conditions make it impractical to obtain the required minimum sight distances (e.g., ramps over levees), a positive means of traffic control shall be implemented.

(e) Dust abatement shall permit observation of objects on the roadway at a minimum distance of 300 feet.

(f) Haul roads shall have the edges of the usable portion marked with posts at intervals not greater than 50 feet on curves and not greater than 200 feet elsewhere. Such markers shall extend 6 feet above the road surface, and for nighttime haulage shall be provided with reflectors in both directions.

(g) Haul roads shall not block or impede drainage in or through the right-of-way. The Contractor is responsible for any damages resulting from haul roads blocking or impeding drainage. (See the Contract Clause PERMITS AND RESPONSIBILITIES.)

3.4 GRADE TOLERANCES

3.4.1 Excavation

All excavation shall be cut to the grades and cross sections shown on the drawings. For excavation in the borrow area, a tolerance of 5/10 of a foot above or below the prescribed grade and cross section shown will be permitted.

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SECTION 31 24 00.00 12

EMBANKMENT

04/2010

SECTION 31 24 00.00 12

EMBANKMENT
04/2010

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations in connection with foundation preparation and construction of semi-compacted impervious embankment and semi-compacted random fill embankment, including mowing the grass within the project limits, stripping of top soil, and other incidental earthwork as may be necessary to complete the embankments, as shown on the drawings, and as hereinafter specified.

1.2 QUALITY CONTROL

1.2.1 General

The Contractor shall establish and maintain quality control for embankment construction operations to assure compliance with contract requirements, and maintain records of its quality control for all construction operations including but not limited to the following:

(1) Equipment. Type, size, and suitability for construction of the prescribed work.

(2) Foundation Preparation. Breaking surface in advance of embankment construction, and during fill placement when necessary, drainage of foundation and partially completed fill.

(3) Materials. Applicable tests, location of material testing sites.

(4) Construction. Layout, maintaining existing drainage, moisture control, thickness of layers, spreading and compacting.

(5) Grade and Cross Section. Crown width, crown slope, side slopes, and grades.

(6) Roads and Ramps. Location of temporary roads to fields or buildings, location and placement of fills for ramps in accordance with specified dimensions and grades.

(7) Grade Tolerances. Check fills to determine if placement conforms to prescribed grade and cross section.

(8) Settlement of Foundation. Location of settlement gages established or measurements taken to determine settlement, location of sudden failures.

(9) Slides. Location and limits; methods and equipment used where remedial work has been directed.

(11) Compliance Surveys. Upon completion of suitable reaches of embankment, the Contractor shall perform, plot and submit compliance cross section surveys at a maximum of 300-foot intervals and all levee transitions and breakpoints. All sections shall be taken at locations corresponding to the pre-construction survey. They shall be plotted by the Contractor on a minimum scale of 1-inch equal to 20 feet horizontally and 1 inch equal to 20 feet vertically with the theoretical design cross section and allowable grade tolerances superimposed thereon.

(12) Quantity Surveys. Provide plotted cross sections of all surveys for progress payments at a maximum of 300-foot intervals. Perform, plot and submit partial levee cross sections at a maximum of 300-foot intervals for determining progress payments. Plot on the same scale noted above.

1.2.2 Reporting

The original and two (2) copies of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL.

PART 2 EQUIPMENT

2.1 General

The following paragraphs are compaction equipment requirements for embankment construction. Equipment shall be capable of compacting a layer of soil not less than 12 inches thick to the requirements specified herein without creating planes of weakness or laminations and shall be operated at speeds not to exceed 3.5 miles per hour.

2.2 Tamping Rollers

2.2.1 Tractor-Drawn

Tractor-drawn tamping rollers shall consist of one or more units. Each unit shall consist of a cylindrical drum not less than 60 inches in length and not less than 60 inches in diameter. Each drum shall have staggered feet uniformly spaced over the cylindrical surfaces so as to provide approximately 3 tamping feet for each 2 square feet of drum surface. The tamping feet shall be 7 to 11 inches in clear projection from the cylindrical surface of the roller, and shall have a face area of not less than 1 nor more than 5 square inches. The drums shall be water or sand and water ballasted. The weight of the roller when fully loaded shall not be less than 3,500 pounds per foot of drum length. The Contractor shall vary the amount of ballast in the drums to obtain optimum compaction effort for the material being compacted. The roller shall be equipped with cleaning devices, so designed and attached as to prevent the accumulation of material between the tamping feet. These cleaning devices shall be maintained at their full length and correct alignment throughout the periods of use of the roller. The rolling units of multiple-type tamping rollers shall be pivoted on the main frame in a manner which will permit the units to adapt themselves to uneven ground surfaces and to rotate independently. The roller shall be pulled by a tractor at a speed not to exceed 3.5 miles per hour.

2.2.2 Self-Propelled

At the option of the Contractor, self-propelled tamping rollers may be used in lieu of tractor-drawn tamping rollers provided these rollers conform to the towed roller requirements for the length and spacing of tamping feet, the empty weight per foot of drum, and cleaning devices. However, selfpropelled rollers exceeding the empty weight requirement may be used, provided that by substitution of tamping feet having a face area not exceeding 14 square inches, the nominal foot pressure on the tamping feet of the self-propelled roller can be adjusted to approximate the foot pressure of the towed roller for the particular working conditions. Self-propelled rollers conforming to the above requirements but with tamping feet exceeding the 14 square inch maximum face area may be approved for use provided the Contractor demonstrates to the satisfaction of the Contracting Officer by field tests performed in accordance with the provisions of subparagraph "Alternative Compaction Equipment" that the roller can properly compact the fill without creating planes of weakness or laminations. For the self-propelled rollers in which steering is accomplished through the use of rubber-tired wheels, the tire pressure shall not exceed 40 psi. The roller shall be operated at a speed of not more than 3.5 miles per hour.

2.3 Rubber-Tired Rollers

Rubber tired rollers shall have a minimum of four wheels per axle equipped with pneumatic tires. The tires shall be of such size and ply as to be capable of being operated at tire pressures between 80 and 100 psi at 25,000 pound wheel load. The roller wheels shall be such that the distance between the nearest edges of adjacent tires is not greater than 50 percent of the rated tire width of a single tire. The roller shall have a rigid steel frame provided with body suitable for ballast loading so that the load per wheel may be varied, as directed by the Contracting Officer, from 18,000 to 25,000 pounds. The roller shall be towed at speeds not to exceed 3.5 miles per hour.

2.4 Crawler-Type Tractors

Crawler-type tractors used for spreading or compaction shall weigh not less than 20,000 pounds, shall exert a unit tread pressure of not less than 6 psi, and shall be operated at speeds not to exceed 3.5 miles per hour when being used for compaction. The tractor will not be considered to be compacting while spreading material.

2.5 Alternative Compaction Equipment

The Contractor may propose use of alternative types of compaction equipment not included in these specifications. The suitability of the alternative equipment must be demonstrated to the Contracting Officer by a field test conducted by and at the expense of the Contractor. The alternative compaction equipment must be capable of properly compacting the soil so that no planes of weakness or laminations are formed in the fill. The field test shall consist of compacting a minimum of three layers of an area of embankment with the alternative type equipment. Testing and inspection of the area shall then be performed by the Contractor at no additional cost to the Government. Procedures for constructing and testing the area will be provided by the Contracting Officer. Each proposed alternative type of equipment must be capable of compacting a layer of soil not less than 12 inches thick. A minimum of four complete passes over each layer of the test fill will be required for each type of alternative equipment that is

allowed for use, unless in the course of constructing the test fill the Contractor is able to demonstrate that proper compaction can be obtained with fewer passes. Alternative type equipment shall be operated at speeds not to exceed 3.5 miles per hour. If sufficient previous testing has been performed on the alternative compaction equipment proposed by the Contractor to verify the suitability of the equipment to the Contracting Officer's satisfaction, the Contracting Officer may determine that the above-specified field test is not required.

2.6 Hand Tampers

Hand tamping shall be used in the compaction of fill within three feet of any structure or other drainage feature and near same where vehicular equipment cannot be used. These hand tampers shall be of the power driven, hand operated type.]

2.7 Miscellaneous Equipment

Scarifiers, disks, spring-tooth or spike-tooth harrows, spreaders, power tampers, and other equipment shall be types suitable for construction of embankment .

2.8 Sprinkling Equipment

Sprinkling equipment shall be designed to apply water uniformly and in controlled quantities to variable widths of surface.

PART 3 EXECUTION

3.1 EMBANKMENT MATERIAls

3.1.1 General

The semi-compacted random fill embankment and semi-compacted impervious fill embankment shall be constructed of earth obtained from the borrow area as prescribed in Section 31 23 00.00 12 and material taken from the existing levee. All fill materials shall be free from masses of organic matter, sticks, branches, roots, and other debris including hazardous and regulated solid wastes. As earth from the designated excavation areas may contain excessive amounts of wood, isolated pieces of wood will not be considered objectionable in the embankment provided their length does not exceed 1 foot, their cross-sectional area is less than 4 square inches, and they are distributed throughout the fill. Not more than 1 percent (by volume) of objectionable material shall be contained in the earth material placed in each cubic yard of the levee section. Pockets and/or zones of wood shall not be placed in the embankment.

3.1.2 Fill Materials

3.1.2.1 IMPERVIOUS FILL

Impervious fill embankment shall be constructed of earth materials that are classified in accordance with ASTM D 2487 as CL or CH. Materials classified as ML are suitable if blended to produce a material that classifies as CH or CL according to ASTM 2487. The contractor shall notify the Contracting Officer whenever the in-place Plasticity Index of the material is 15 or less. Materials placed in the sections must be at or above the Plasticity Index of 10. Materials placed in the section must be at or below organic

content of 9 percent by weight, as determined by ASTM D 2974, Method C.

3.1.2.2 RANDOM FILL

Random backfill material shall consist of any or all types of satisfactory material from government furnished borrow pit. Material classified in accordance with ASTM D 2487 as gravels (GW, GP, or GM) and sands (SW, SP, SM) shall not be used.

3.2 EMBANKMENT FOUNDATION PREPARATION

3.2.1 Foundation Preparation

After clearing and grubbing, the grass and top soil located in areas receiving embankment shall be left in place until the Contractor begins semi-compacting earthen materials to widen the levee crown and flatten the riverside slope to the limits as shown on the drawings. At this time the contractor shall strip the upper four inches of top soil, stockpile the top soil with the construction limits and redistribute the top soil on top of the newly semi-compacted earthen materials once Embankment operations are completed and the slopes are constructed to the required 1V:4H slope. Contractor can utilize the previously removed topsoil to complete the widened levee section and slope flattening with semi-compacted backfill. All of the foregoing work shall be completed at least 200 feet but not greater than 600 feet in advance of the embankment construction.

3.2.2 Mowing the Grass

The Contractor will be required to keep the levee grass mowed throughout the specified time for this contract or until the contract is completed, including the non-work period time frame of 15 December to 31 May. The grass shall be mowed when the grass reaches 18-inches in height for more than 50 percent of the area within the R.O.W. limits as shown on the drawings or as directed by the Contracting Officer. The Contracting Officer may also require the Contractor to mow the grass if an event on the Mississippi River is predicted to flood the project site and place water against the riverside of the levee. The mowing will aid in inspection of the levee during flood fight monitoring of the levee. If the Contractor is required to mow the grass other than the requirements above, then the Contractor will be paid under the Changes Clause. The Contractor shall include this maintenance requirement in the submitted schedule as outlined in these paragraphs. The cost for maintaining the grass on the levee shall be incedental to Embankment.

3.2.3 Frozen Ground

No fill shall be placed upon frozen ground.

3.3 EMBANKMENT CONSTRUCTION

3.3.1 Semicompacted Fill

The location and extent of the semicompacted fill is shown on the drawings. Semi-compacted fill shall not be placed in water. Layers shall be started full out to the slope stakes and shall be carried substantially horizontal and parallel to the levee centerline with sufficient crown or slope to provide satisfactory drainage during construction. Requirements for benching into the slope of the existing embankment are required in order to place and compact the material in horizontal layers as described

on the drawings. Benching shall consist of excavating the existing levee embankment as shown on the drawings and described herein. The vertical face of the existing embankment resulting from the benching operation shall be a minimum of 9 inches in height but shall not exceed 1.75 feet in height as shown on the drawings. Material excavated from the benching operations shall be used as semi-compacted fill. Benching is required only in areas designated on the contract drawings as requiring benching. When the surface of any compacted layer is too smooth to bond properly with the succeeding layer, it shall be adequately scarified before the next layer is placed thereon.

3.3.1.1 Compaction - Semicompacted Fill

The materials for semicompacted fill shall be placed or spread in layers, the first or bottom layer and the last two layers not more than 6 inches in loose lift thickness. All layers between the first and the last two layers should be loose lifts not more than 9 inches thick before compaction. . When the moisture content and conditions of the spread layer are satisfactory, each layer shall be compacted by any of the following methods at the option of the contractor.

(1) Tamper-Type Roller. Four complete passes over each layer will be required. If tamping rollers are used in tandem, not more than two rows will be permitted, and in such case, one trip of the tandem rollers over any surface will be considered as two passes. When tamping rollers are used in tandem, the tamper foot spacing shall be offset so that the circumferential rows on the rear drums are in line with the midpoint of the circumferential rows of the forward drums. Each pass of the tamping roller shall overlap the preceding or adjacent pass by not less than 1 foot.

(2) Rubber-Tired Rollers. Two complete passes over each layer will be required.

(3) Crawler-Type Tractor. Three complete passes over each layer will be required. The tractor will not be considered to be compacting while spreading materials.

3.3.1.2 Definition of Pass

A pass shall consist of one complete coverage of the surface of a layer by the treads of a roller, tractor, or other compacting equipment. Portions of the embankments which the compacting equipment can not reach for any reason shall be compacted by an approved method to the density at least equal to that of the surrounding embankments.

3.3.1.3 Moisture Control - Semicompacted Fill

It is intended that the material will be placed in the embankment at its natural moisture content. No moisture control will be required by the Contractor unless, in the opinion of the Contracting Officer, the desired compaction is not being obtained with the prescribed compactive effort due to the material being too wet or too dry. In such cases, the Contractor shall perform moisture control as described below. If the material is too wet, it shall either be stockpiled and allowed to drain before it is placed in the embankment cross-sections and/or the wet material shall be processed by disking and harrowing, if necessary, until the moisture content is reduced sufficiently. If the material is too dry, it shall either be pre-wet or sufficient moisture shall be uniformly distributed in each layer before compaction.

3.4 DRESSING

The entire semi compacted impervious embankment , including topsoil where specified, shall be brought to not less than the prescribed design cross section, within allowable tolerance, at all points. Unreasonable roughness of the surface shall be dressed out to permit fertilizing, and seeding operations and to ensure that water is not impounded on the surface. A tolerance of five-tenths of one foot above the presribed grade and cross section will be permitted in the final dressing.

3.5 EMBANKMENT WORK ADVANCEMENT

The Contractor shall prosecute the embankment work such that no more that 1,000 linear feet of levee shall be under embankment construction at any time between the limits of the approved levee cross section that has been fertilized, seeded and mulched and the farthest extent of levee clearing ahead of the embankment work. If the Contractor elects to perform embankment work in multiple locations within the total contract length, the sum of the lengths of the multiple embankment construction locations allowed shall not exceed the above given total length of 3,000 linear feet. The limits of embankment work for each of the multiple locations as they fall within the total contract length, shall be between the limits of the approved levee cross section that has been fertilized, seeded and mulched and the farthest extent of levee clearing ahead of the embankment work as pertinent to that particular location.

3.6 CROSS SECTIONS AND ZONING OF MATERIAls

3.6.1 Embankment Sections

Unless otherwise specified, the dimensions and slopes shall conform to the applicable dimensions, shown on the drawings.

3.6.2 Zoning of Materials for Levee Construction

In general, the levee section shall be homogeneous; however, where materia ls of varying permeabilities are encountered in the borrow areas, the more impervious material shall be placed toward the floodside slope, and the more pervious material toward the protected side slope.

3.7 ACCESS ROADS, RAMPS AND CROSSINGS, RUNWAYS, AND DETOURS

3.7.1 Access Roads

3.7.1.1 Criteria

Access roads shall be located and constructed as approved by the Contracting Officer. They shall be designed to maintain the intended traffic and be free draining. The pre-construction and post-construction conditions shall be verified/documented by the use of Contractor furnished surveys and/or videos at the direction of the Contracting Officer. In addition to all Contract Clauses, the Contractor shall take note of the requirements of Section 00700, contract clauses entitled, "Permits and Responsibilities (FAR 52.236-7)" and "Operations And Storage Areas (FAR 52.236-10)" in the performance of the work required herein. The Contractor should also be aware that truck routes and truck speed limits are subject

to change and it should check with the appropriate state and/or county officials for the applicable regulations. The Contractor shall furnish and use equipment (i.e., front-end loaders and street sweepers) as necessary to continuously keep any public street used free and clean of mud and other debris resulting from its hauling operations. No separate payment will be made for this work.

3.7.1.2 Temporary Roads

At locations where existing roads are destroyed because of the work required under this contract, the Contractor shall provide temporary roads to give access during the construction period. The temporary roads shall be constructed by placement of fill as specified in paragraphs "Compaction-Semicompacted Fill" and "Semicompacted Fill". The temporary roads shall be removed after permanent access has been provided. No separate payment will be made for this work.

3.7.1.3 Watering

The Contractor shall water down the access roads that are within the construction easement area as necessary to keep dust from being blown or drifting into the adjacent areas. The Contractor shall be responsible for providing a minimum 500-gallon capacity water truck designed to apply water uniformly in controlled quantities over variable widths of surface to control dust during construction.

3.8 SLIDES

Should a slide occur in any part of the embankment during its construction, or after its completion, but prior to its acceptance, the Contractor shall, upon written order of the Contracting Officer, either cut out and remove the slide from the embankment and then rebuild that portion of the embankment, or construct a stability berm of such dimension, and placed in such manner, as the Contracting Officer shall prescribe. In case the slide is caused through fault of the Contractor, the foregoing operations shall be performed at no additional cost to the Government. In case the slide is not the fault of the Contractor, the repair shall be made by an equitable adjustment under the Contract Clause in Section 00700 entitled, "Changes (FAR 52.243-4)." The method of slide correction will be determined by the Contracting Officer.

-- End of Section --

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SECTION 32 15 00.00 11

AGGREGATE SURFACE COURSE
06/01/10

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C 117	(2004) Standard Test Method for Materials Finer than 75-um (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 131	(2006) Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM D 1557	(2009) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3) (2700 kN-m/m3)
ASTM D 3740	(2008) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM D 422	(1963; R 2007) Particle-Size Analysis of Soils
ASTM D 4318	(2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 75/D 75M	(2009) Standard Practice for Sampling Aggregates
ASTM E 11	(2009) Wire Cloth and Sieves for Testing Purposes

1.2 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment

List of proposed equipment to be used in performance of construction work including descriptive data.

SD-04 Samples

Representative Sample of the Aggregate Surfacing; G

Submit suitable samples prior to delivery of any such material to the worksite if stone is not from one of the stone sources posted at http://www.mvm.usace.army.mil/Portals /51/docs/construction/MVDStonelsT.pdf

SD-06 Test Reports

Sampling and Testing

Records and Tests

Density Tests; G

Calibration curves and related test results prior to using the device or equipment being calibrated. Copies of field test results within 24 hours after the tests are performed. Test results from samples, not less than 30 days before material is required for the work. Results of laboratory tests for quality control purposes, for approval, prior to using the material.

Gradation Test; G

Copies of field test results within 24 hours after the tests are performed. Test results from samples, not less than 30 days before material is required for the work. Results of laboratory tests for quality control purposes, for approval, prior to using the material.

1.3 QUALITY CONTROL

The Contractor shall establish and maintain quality control for the work specified in this section to assure compliance with contract requirements and maintain records of his quality control for all construction operations including but not limited to the following:

(1) If applicable, inspection of the existing surface preparation. Grading of any pot holes, or rutted areas in existing surface to provide an even riding surface.

(2) Note the date of aggregate delivery, and the source from which the aggregate originated.

(3) Proper placement of materials including: width, thickness, distribution, compaction, final grading, and maintenance.

A copy of these drawings, Records and Tests, as well as the records of corrective action taken, shall be furnished to the Government.

1.4 EQUIPMENT

All plant, equipment, and tools used in the performance of the work covered by this section will be subject to approval by the Contracting Officer before the work is started and shall be maintained in satisfactory working condition at all times. The equipment shall be adequate and shall have the capability of producing the required compaction, and meeting the grade controls, thickness controls, and smoothness requirements set forth herein.

1.5 APPROVAL OF MATERIALS

The material source to be used for producing aggregates shall be selected well in advance of the material being required in the field. For sources for material that meet the quality requirements see the paragraph entitled, "STONE SOURCES" in Section 00 80 00.00 11 SPECIAL CONTRACT REQUIREMENTS. Approval of sources not already approved by the Corps of Engineers will be based upon tests for gradation, liquid limit, and plasticity index performed on samples taken from the completed and compacted surface course.

1.6 SAMPLING AND TESTING

Sampling and testing shall be the responsibility of the Contractor. A Representative Sample of the Aggregate Surfacing shall be taken by the Contractor under the supervision of the Contracting Officer. All costs of the sampling and testing, except as specified in "Government Testing" below, shall be borne by the Contractor and no separate payment will be made therefore. Sampling and testing shall be performed by an approved commercial testing laboratory in accordance with the paragraphs entitled, "Testing Procedure" and "Testing Laboratories" in Section 01 45 04.00 11 CONTRACTOR QUALITY CONTROL. If the Contractor elects to establish his own testing facilities, approval of such facilities will be based on compliance with ASTM D 3740. No work requiring testing will be permitted until the Contractor's facilities have been inspected and approved.

1.6.1 Sampling

Sampling for material gradation, liquid limit, and plastic limit tests shall be taken in conformance with ASTM D 75/D 75M. When deemed necessary, the sampling will be observed by the Contracting Officer.

1.6.2 Testing

It is important that both field density tests and laboratory tests be conducted on the same materials.

1.6.2.1 Gradation

Aggregate gradation shall be made in conformance with ASTM C 117, ASTM C 136, and ASTM D 422. Sieves shall conform to ASTM E 11. Prior to delivery of any material to the job site, the aggregate shall be tested for compliance with the specifications by an approved commercial testing laboratory. Gradation tests shall be performed before each 2,000 cubic yards of material is delivered to the job site. In the event a noticeable change in the aggregate is observed during placement, testing shall be performed at the direction of the Contracting Officer regardless of the quantity of aggregate delivered. Certified results of the tests shall be submitted to the Contracting Officer for approval before the next 2,000 cubic yards of material is delivered to the job site. When a noticeable change is observed during placement of the aggregate, samples shall be obtained from

the delivery truck and a Gradation Test shall be performed by the Contractor. The Contracting Officer will determine whether a representative of the Government will be present. If any testing or sampling is done without a representative of the Government, then these results shall be submitted for Government Approval. If this test fails to meet the requirements, then the questionable aggregate shall be removed from the job site.

1.6.2.2 Liquid Limit and Plasticity Index

Liquid limit and plasticity index shall be determined in accordance with ASTM D 4318.

1.6.2.3 Degree of Compaction

Degree of compaction is a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 abbreviated herein as present laboratory maximum density.

1.6.2.4 Wear Test

Wear tests shall be made in conformance with ASTM C 131.

1.6.2.5 Smoothness Test

The surface of each layer shall not show any deviations in excess of 1/2 inch when tested with a 10 foot straightedge applied both parallel with and at right angles to the centerline of the area to be paved. Deviations exceeding this amount shall be corrected by the Contractor by removing material, replacing with new material, or reworking existing material and compacting, as directed.

1.6.2.6 Government Testing

When samples for testing are taken, the Contractor shall take samples for assurance testing to be performed by and at the expense of the Government. The Contractor shall deliver such samples to:

NAME: Mr. Jack Ratliff, ACO
ADDRESS: Caruthersville, MO Area Office
706 Harry S. Truman Boulevard
Caruthersville, Missouri 63830-1268

TELEPHONE: (901) 544-3074 OR (573) 333-1043.

Notice of assurance sample deliveries shall be given to the Area Engineer prior to delivery.

PART 2 PRODUCTS

2.1 AGGREGATES

Aggregates shall consist of clean, sound, durable particles of crushed limestone or granite. All materials shall be free from organic matter, lumps or balls of clay, objectionable coatings, and other foreign materials. The material shall conform to the requirements as specified by "Coarse Aggregates", "Fine Aggregates" and ASTM D 422. All aggregate furnished under this contract shall comply favorably with representative samples as

to quality, gradation, and moisture content. The Contractor shall be responsible for obtaining materials that meet the specification and can be used to meet the grade and smoothness requirements specified herein.

2.1.1 Coarse Aggregates

Coarse aggregate is defined as aggregate retained on the No. 10 (2.00mm) sieve. Coarse aggregates shall be reasonably uniform in density and quality. Coarse aggregate shall consist of hard, durable particles or fragments of stone. Materials that are soft, pliable, or subject to rapid deterioration when exposed to weathering shall not be used. The coarse aggregate shall have a percentage of wear not to exceed 50 percent after 500 revolutions as determined by ASTM C 131. The amount of flat and/or elongated particles shall not exceed 20 percent. A flat particle is one having a ratio of width to thickness greater than three; an elongated particle is one having a ratio of length to width greater than three. When the coarse aggregate is supplied from more than one source, aggregate from each source shall meet the requirements set forth herein.

2.1.2 Fine Aggregates

Fine aggregate is defined as aggregate passing the No. 10 (2.00mm) sieve. Fine aggregate shall consist of natural or crushed sand, and also shall include fine particles passing the No. 200 (0.075 mm) sieve. The fraction of the material passing the No. 200 (0.075 mm) sieve shall be no more than two-thirds that of the fraction passing the No. 40 (0.425 mm) sieve. That portion of the aggregate passing the No. 40 (0.425 mm) sieve shall have a liquid limit of not more than 35 and a plasticity index of not less than 6 nor more than 15, as determined by ASTM D 4318. However, if crushed stone is used, the plasticity index shall be between 0 and 15.

2.1.3 Gradation Requirements

Gradation requirements specified in TABLE I shall apply to the completed aggregate surface. It shall be the responsibility of the Contractor to obtain materials that will meet the gradation requirements after mixing, placing, compacting, and other operations. TABLE I shows permissible gradations for granular material used in aggregate surface roads. Sieves shall conform to ASTM E 11.

TABLE I. GRADATION FOR AGGREGATE SURFACE COURSES

U.S. Standard Sieve Sieve Designation	Permissible Limits Percent By Weight, Passing
1-1/2 in.	100
1 in.	90 - 100
3/4 in.	70 - 100
1/2 in.	58 - 90
No. 4 (4.75mm)	35 - 71
No. 10 (2.00mm)	25 - 52
No. 40 (0.425mm)	12 - 32
No. 200 (0.075mm)	6 - 16

PART 3 EXECUTION

3.1 WEATHER LIMITATIONS

Aggregate surface courses shall not be constructed when the ambient

temperatures is below 35 degrees F and on subgrades that are frozen or contain frost. It shall be the responsibility of the Contractor to protect, by approved method or methods, all areas of surfacing that have not been accepted by the Contracting Officer. Surfaces damaged by freeze, rainfall, or other weather conditions shall be brought to a satisfactory condition by the Contractor.

3.2 CLEARING AND DEBRIS REMOVAL

All grass, weeds, sod, and other debris shall be cleared from the subgrade prior to placement of aggregate surface material. Debris resulting from clearing operations shall be removed from the project right-of-way, in compliance with all Federal, State, and local laws. Care should be taken to not disturb the levee side slopes. Any damage to the levee side slopes shall be repaired at the Contractor's expense and to the Contracting Officer's satisfaction.

3.3 USE OF HAUL ROADS

The Contractor shall acquaint himself with load limits and other regulations applicable to his use of public roads and/or highways for deliveries to be made under this contract and shall comply with all such load limits and regulations. Haul roads on the levee and its appurtenances which are used by the Contractor shall be maintained by him in a condition satisfactory for vehicular traffic. The Contractor shall not operate hauling equipment on the levee slopes except at ramps.

3.4 STOCKPILING MATERIAls

Prior to any stockpiling of material, the storage sites shall be cleared and leveled by the Contractor. All materials shall be stockpiled in the manner and at locations approved by the Contracting Officer. Aggregates shall be stockpiled in such a manner that will prevent segregation. Aggregates and binders obtained from different sources shall be stockpiled separately.

3.5 PREPARATION OF UNDERLYING SUBGRADE

The subgrade shall be prepared as indicated on the drawings and so that drainage will occur each way from the centerline. Subgrade shall be graded and smooth. The subgrade shall be in a satisfactory condition for receiving the aggregate for a distance of at least 1500 feet in advance of the placing of the resurfacing material. All potholes and ruts in the existing roadway surface shall be repaired in advance of resurfacing by removing any soft material in and/or adjacent to the potholes and ruts and by placing and compacting aggregate until the damaged area is restored to the same elevation as the surrounding undamaged road surface. The potholes and ruts shall be dry at the time of repair.

3.6 GRADE CONTROL

During construction, the lines and grades including crown and cross slope indicated for the aggregate surface course shall be maintained by means of line and grade stakes placed by the Contractor. A tolerance of plus or minus 1/2 inch from the required finish surface of the aggregate surfacing will be allowed provided these extremes do not occur adjacent to each other, and neither extreme exists over more than 10 percent of the total area.

3.7 MIXING AND PLACING MATERIAls

The materials shall be mixed and placed to obtain uniformity of the material and a uniform optimum water content for compaction. The Contractor shall make adjustments in mixing, placing procedures, or in equipment to obtain the true grades, to minimize segregation and degradation, to obtain the desired water content, and to ensure a satisfactory surface course.

3.8 PLACEMENT

(1) Subgrade shall be prepared as described in Section 3.5 - Preperation of Underlying Subgrade. In those areas required by the plans to have geotextile, geotextile shall be placed immediately above the preparedsubgrade to the width and length described in the plans. Placement of geotextile shall conform to the methods described in 31 05 19 GEOTEXTILE.

(2) Aggregate shall be placed and spread upon the subgrade or geotextile in the amount required to produce a pavement with width and compacted thickness as indicated on the drawings. The placement shall be commenced at the nearest point of delivery of the aggregate surfacing material, and shall be carried continuously away from such point. Placing of aggregate will not be allowed when the roadway surface, in the opinion of the Contracting Officer, is too wet to place aggregate. Reaches of surfacing shall be graded and dressed to provide a slope each way from the centerline.

(3) No un-spread aggregate shall be left in a piled condition overnight. By the end of each workday, all aggregate surfacing hauled and placed shall be spread and blended into the existing levee roadway surface and ramps. At no time under this contract shall aggregate surfacing be dumped and left at the end of the workday without being placed as specified above.

(4) In the event aggregate is hauled over rolled or completed portions of the resurfacing, such portions shall be subsequently graded, dressed and rolled again as specified herein above at no additional cost to the Government.

3.9 LAYER THICKNESS

The aggregate surface course shall be placed on the subgrade in layers of uniform thickness. When a compacted layer of 6 inches or less is specified, the material may be placed in a single layer; when a compacted thickness of more than 6 inches is required, no layer shall exceed 6 inches nor be less than 3 inches when compacted.

3.10 THICKNESS CONTROL

The completed thickness of the aggregate surface course shall be within 1/2 inch, plus or minus, of the thickness indicated on the plans. The thickness of the aggregate surface course shall be measured at intervals in such manner that there will be a thickness measurement for every 1000 feet of aggregate surfaced course placed. The thickness measurement shall be made by test holes at least 3 inches in diameter through the aggregate surface course. When the measured thickness of the aggregate surface course is more than 1/2 inch deficient in thickness, the Contractor, at no additional expense to the Government, shall correct such areas by scarifying, adding mixture of proper gradation, reblading, and recompacting, as directed. Where the measured thickness of the aggregate surface course is more than 1/2 inch thicker than that indicated, it shall

be considered as conforming with the specified thickness requirements plus 1/2 inch. The average job thickness shall be the average of the job measurements determined as specified above, but shall be within 1/4 inch of the thickness indicated. When the average job thickness fails to meet this criterion, the Contractor shall, at no additional expense to the Government, make corrections by scarifying, adding or removing mixture of proper gradation, and reblading and recompacting, as directed.

3.11 COMPACTION

Each layer of the aggregate surface course shall be compacted with approved compaction equipment. At a minimum, the reaches shall be compacted by at least four passes of a pneumatic tired roller having tire pressure of 35 to 40 pounds per square inch and a gross weight of not less than 20,000 pounds or by other approved compacting equipment which will obtain comparable compaction. A pass of the roller shall consist of the completed coverage of the surface by the roller. The compaction passes of the roller shall not be performed when the material is so wet that it is displaced under the roller or when the material is too dry for proper bonding. The water content during the compaction procedure shall be maintained at optimum or at the percentage specified by the Contracting Officer. In locations not accessible to the rollers, the mixture shall be compacted with mechanical tampers. Compaction shall continue until each layer through the full depth is compacted to at least 100 percent of laboratory maximum density. Any materials that are found to be unsatisfactory shall be removed and replaced with satisfactory material or reworked to produce a satisfactory material.

3.12 EDGES OF AGGREGATE-SURFACED ROAD

Approved material shall be placed along the edges of the aggregate surface course in such quantity as to compact to the thickness of the course being constructed. When the course is being constructed in two or more layers, at least 1 foot of shoulder width shall be rolled and compacted simultaneously with the rolling and compacting of each layer of the surface course.

3.13 MAINTENANCE

The aggregate surface course shall be maintained in a condition that will meet all specification requirements until accepted.

-- End of Section --

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ESTABLISHMENT OF TURF

07/31/07

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SECTION 32 92 32.01 11

ESTABLISHMENT OF TURF
07/31/07

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all necessary operations for establishment and maintenance of turf as specified herein.

1.2 REFERENCES

The publications listed below form a part of this section to the extent referenced:

ASTM INTERNATIONAL (ASTM)

ASTM C 602	(2007) Agricultural Liming Materials
ASTM D 4972	(2001) pH of Soils

TURFGRASS PRODUCERS INTERNATIONAL (TPI)

TPI GSS	(1995) Guideline Specifications to Turfgrass Sodding

U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act	(1940; R 1988; R 1998) Federal Seed Act
DOA SSIR 42	(1996) Soil Survey Investigation Report No. 42, Soil Survey Laboratory Methods Manual, Version 3.0

1.3 SUBMITTAls

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Fertilizer Invoices

Seed Invoices

SD-04 Samples

Mulch Material

SD-06 Test Reports

Certified Fertilizer Quantitative Analysis Report

In the event commercial fertilizer mixture is delivered to the jobsite in the original containers, unopened, the analysis report will not be required.

Certified Soil Test Results

Additionally, provide the application rates for Nitrogen, Phosphorous, Potash, and Limestone.

SD-07 Certificates

AMS Seed Act Certification

Mulch Supplier Certification

Certified Weight Tickets for the Fertilizer

1.4 QUALITY CONTROL

The Contractor shall establish and maintain quality control for turfing operations to assure compliance with the contract requirements and shall maintain records of his quality control for all construction operations, including, but not limited to the following:

a. Soil Testing

The tests are specified in the paragraph entitled "Soil Testing" below.

b. Preparation of Ground Surface

Indicate the location and quality of finish dressing, including necessary clearing, filling, or dressing-out of washes, smoothness and uniformity of surfaces, and time of year.

c. Fertilizing and Liming

Indicate the quality of materials, area fertilized and limed, quantity applied, and method of application.

d. Type of Turf

Indicate the quality, source, placing, covering, and compaction effort.

e. Seeding

Indicate the quality and type of seed, area covered, rate of application, quantity of seed used, and method of distribution.

f. Mulching

Indicate the type of materials, area mulched, quantity applied, and method of application.

g. Maintenance and Repair

Indicate the location and type of maintenance problems and remedial treatment performed.

h. Watering

Indicate the quality of water, area watered, quantity applied, and method of application.

A copy of these quality control records and tests, as well as the records of corrective action taken, shall be furnished the Government.

1.5 AREAS TO BE TURFED

Turf shall be established on all disturbed areas, excluding areas to receive aggregate surfacing. At a minimum, the turf shall be established on the surface of the levee including the newly established levee toe, and on the slopes of the borrow area, including all perimeter ground around the borrow area within the borrow area construction limits. Any other areas disturbed by the Contractor, due to his actions or his method of operation, shall be restored to its previous condition.

PART 2 PRODUCTS

2.1 MATERIAls

2.1.1 Fertilizer and Limestone

The fertilizer used under this contract shall meet the requirements of the State or States in which the work is being performed for commercial fertilizer. Fertilizer shall consist of a mixture containing nitrogen, phosphorous, and potash, and shall be uniform in composition and free-flowing. The fertilizer may be delivered to the site in bags or other convenient containers or delivered in bulk. If delivered in bags or containers, the fertilizer shall be fully labeled in accordance with the applicable fertilizer laws of the State or States in which the work is being performed, and shall bear the name, tradename or trademark, and warranty of the producer. Should the commercial fertilizer be furnished in bulk, the Contractor shall furnish to the Contracting Officer Certified Weight Tickets for the Fertilizer and a Certified Fertilizer Quantitative Analysis Report, in triplicate, from a recognized testing laboratory certifying the nutrient ratio of the materials. In the event the commercial mixture is delivered to the jobsite in the original containers, unopened, the analysis report will not be required. Quantity of fertilizer and limestone required per acre shall be determined by certified soil tests as specified in the paragraph entitled "Soil Testing". Limestone shall be approved agricultural grade limestone containing not less than 85 percent calcium carbonate equivalent (C.C.E.) as specified in ASTM C 602. Limestone shall be ground to such fineness that 25 percent will pass a 100 mesh sieve and 100 percent will pass an 8 mesh sieve.

2.1.2 Seed

The Contractor shall furnish seed of the latest season's crop labeled in conformance with AMS Seed Act and applicable State seed laws. Seed shall be furnished in original sealed packages, bearing producer's guaranteed analysis for percentages of mixtures, purity, germination, weedseed content, and inert material, unless written exception is granted. Field mixes will be acceptable when field mix is performed on site in the

presence of the Contracting Officer. Seed that is wet or moldy or that has been otherwise damaged in transit or storage will be rejected. The specifications for seeds shall conform to the following, unless otherwise approved by the Contracting Officer.

SEED PURITY:

Kind of Seed	Minimum Percent Purity	Minimum Percent Germination
Kentucky 31 Tall Fescue	95	80
Rye Grass (Common Perennial)	95	80
Bermuda Grass	95	80
Timothy Grass	95	80

2.1.3 Mulch

If the Contractor elects to use mulch to protect the turfed areas, the material used for mulching shall be threshed straw from a cereal grain such as oats, wheat, barley, rye, or rice; or wood fiber. Materials that contain noxious grass or weed seed that might be detrimental to the turfing being established or detrimental to adjacent farmland will not be acceptable.

a. Wood Cellulose Fiber Mulch. Wood cellulose fiber mulch for use with hydraulic application equipment shall consist of wood cellulose fiber, processed to contain no growth or germination inhibiting factors, and dyed an appropriate color to facilitate visual metering of application of the materials. The wood cellulose fiber shall contain not in excess of 10 percent moisture, air-dry weight basis, and shall be in the pH range from 5.5 to 7.0. The wood cellulose fiber shall be manufactured so that after addition and agitation in slurry tanks, with water, and any other additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry; and that when hydraulically sprayed on the ground, the material will form a blotter-like groundcover which, after application, will allow the absorption of moisture and allow rainfall or mechanical watering to percolate to the underlying soil. The Contractor shall be prepared to submit, on request, Mulch Supplier Certification evidencing that laboratory and field-testing of the product has been accomplished, and that the product meets the foregoing requirements.

b. Mulching Equipment. Hydraulic equipment used for the application of slurry of prepared wood cellulose fiber mulch shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with hydraulic spray nozzles that will provide even distribution of the slurry on the various slopes to be mulched. The slurry tank shall have a minimum capacity of 1,000 gallons and shall be mounted on a traveling unit, which may be either self-propelled or drawn by a separate unit, that will place the slurry tank and spray nozzles near the areas to be mulched so as to provide uniform distribution without waste. The Contracting Officer may authorize equipment with a smaller tank capacity provided that the equipment has the necessary agitation system and sufficient pump capacity to spray the slurry in a uniform coat over the surface of the area to be mulched.

2.1.4 Water

The source of water shall be approved by Contracting Officer and of suitable quality for irrigation, containing no elements toxic to plant life.

2.1.5 Spot Sod

If the Contractor elects to spot sod, the sod used to turf the areas specified shall contain a minimum of 85 percent Bermuda Grass. Each piece of sod shall have an area of not less than 16 square inches and shall have not less than 2 inches of earth adhering to the roots. Sod that contains noxious grasses and weeds that might be detrimental to the turfing being established will not be acceptable.

2.1.6 Sprigs

If the Contractor elects to sprig, the sprigs used under this contract shall consist solely of Bermuda Grass. The sprigs shall be healthy living stems, stolons, or rhizomes and attached roots of locally adapted grass without adhering soil, including two to three nodes and from 4 to 6 inches long. The sprigs shall be obtained from heavy, dense certified sod as classified in the TPI GSS. The sprigs provided shall have been grown under climatic conditions similar to those in the locality of the project. The harvesting and planting operations shall be coordinated to prevent exposure of sprigs to the sun for more than 30 minutes before covering and moistening. Sprigs containing weeds or other detrimental material or that are heat damaged will be rejected.

2.1.7 Soil for Repairs

For fill of areas to be repaired, soil shall be of a quality at least equal to that which exists in areas adjacent to the area to be repaired. Soil used shall be free from roots, stones, and other materials that hinder grading, planting, and maintenance operations and shall be free from objectionable weed seeds and toxic substances.

2.1.8 Soil Composition

If necessary, the soil shall be amended to the composition as required by the Soil Tests. The Soil Tests are further described in the paragraph entitled, "Soil Testing" below. If necessary, pH adjusters shall be used to bring the pH within the 5.5 to 7.0 range. The soil shall contain from 5 to 10 percent organic matter as determined by the Soil Tests of the Organic Carbon, 6A, Chemical Analysis Method described in DOA SSIR 42.

2.2 SAMPLING, TESTING, AND CERTIFICATES

Sampling and testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government. Sampling and testing shall be performed by a recognized testing agency.

2.2.1 Seed

The Contracting Officer shall be furnished duplicate signed copies of statements certifying that each container of seed delivered is labeled in accordance with the AMS Seed Act and is at least equal to the requirements specified in the paragraph entitled "Seed" above. This AMS Seed Act Certification shall be obtained from the supplier and shall be furnished on or with all copies of Seed Invoices.

2.2.2 Soil Testing

Prior to beginning turfing operations, at least three soil samples per acre, from the areas to be turfed, shall be tested to determine soil nutrient and limestone requirements. The pH shall be tested in accordance with ASTM D 4972. The percentage of organic matter shall be tested in accordance with the Organic Carbon, 6A, Chemical Analysis Method described in DOA SSIR 42. Certified Soil Test Results, and recommended application rates for Nitrogen, Phosphorous, Potash, and Limestone, indicated by the Soil Tests shall be furnished to the Contracting Officer prior to fertilizing.

2.2.3 Fertilizer and Limestone Testing

Duplicate signed copies of Fertilizer Invoices from suppliers shall be submitted to the Contracting Officer. Invoices for fertilizer shall show quantities and the percentages of nitrogen, phosphorous, and potash. If limestone is used, the limestone invoice shall show the quantity and the percentages of limestone that pass the 100 mesh and 8 mesh sieves. Upon completion of the project, a final check of the total quantity of fertilizer used will be made against total area treated, and if minimum rates of application have not been met, an additional quantity of material sufficient to make up the minimum application rate shall be distributed as directed by the Contracting Officer.

2.2.4 Mulch

If mulch is used, a representative sample of the Mulch Material proposed for use shall be submitted for approval of the Contracting Officer.

PART 3 EXECUTION

3.1 COMMENCEMENT, PROSECUTION, AND COMPLETION

The turfing operation shall commence as soon as practicable following the completion of construction in an area. Prior to prosecuting the turfing operation, the Contractor shall repair rainwash, if any, dress, and prepare the areas for turfing.

3.2 PREPARATION OF GROUND SURFACE

After areas have been brought to the indicated finish grade, remove debris and stones larger than 3/4 inch remaining on the surface. Correct irregularities in finish surfaces to eliminate depressions. Provide equipment, in good condition, for the proper preparation of the ground and for handling and placing all materials.

3.2.1 Clearing

Prior to grading and finish dressing, vegetation that may interfere with turfing operations shall be removed and shall be disposed of by removal from site and/or burning. The surface shall be cleared of roots, cable, wire, and other materials that might hinder the work or subsequent maintenance.

3.2.2 Dressing

Surfaces to be turfed, shall be dressed to the extent necessary to provide

drainage and the specified slopes, and as necessary to remove high points and fill depressions sufficiently to provide reasonably smooth surfaces. Surfaces shall be prepared by dressing so as to produce smooth profiles, crown widths, and end slopes.

3.3 SPOT SODDING AND SPRIGGING

The Contractor may elect to spot sod or sprig. The areas to be turfed by spot sod or sprigging shall be with Bermuda Grass to meet the coverage requirements as set forth in the paragraph entitled "ESTABLISHMENT" below.

3.4 SEEDING

Seed sown during the Summer and Winter Seasons shall consist of the seed mixture as indicated below. A satisfactory method of sowing shall be employed to meet the coverage requirements as set forth in the paragraph entitled "ESTABLISHMENT" below.

3.4.1 Planting Dates

Planting Season	Planting Dates
Summer Season	1 March to 31 August
Winter Season	1 September to 28 February
Temporary Seeding	Year-Round

3.4.2 Seed Mixtures

Planting Season	Variety	Percent Coverage
Summer Season	Kentucky 31 Tall Fescue	30 %
	Bermuda Grass	70 %
Winter Season	Rye Grass (Common Perennial)	25 %
	Bermuda Grass	40 %
	Timothy Grass	35 %
Temporary Environmental Seeding	Kentucky 31 Tall Fescue	50 %
	Bermuda Grass 50 %	
	Rye Grass 50 %	

Temporary environmental seeding must later be replaced by Summer Season plantings for a permanent stand of grass. The same requirements of turf establishment apply for temporary seeding.

3.4.3 Damage to Seeding

The Contractor shall be fully responsible for any damage to the seeded areas caused by his operations. Areas that become damaged shall be repaired without additional cost to the Government.

3.5 APPLICATION OF ANCHORING MULCH

The Contractor may elect to mulch the seeded areas. Wood cellulose fiber mulch shall be applied with equipment conforming to the requirements as set forth in the paragraph entitled, "Mulching Equipment" above.

3.6 HYDRAULIC SLURRY METHOD

The hydraulic slurry method of seeding, fertilizing, and mulching, or any combination thereof, may be used by the Contractor. Equipment to be used for application of materials by the hydraulic slurry method shall conform to the requirements specified in the paragraph entitled, "Mulching Equipment" above.

3.7 COMPACTING

The Contractor may elect to compact after seeding operations have been completed. When used, the roller shall be between 90-110 pounds per foot roller width. If used, the roller shall be operated parallel to the centerline of the levee.

3.8 ESTABLISHMENT

3.8.1 General

Turfing will be considered to be completed when the areas to be turfed show that growth of the specified grass has reached a point of maturity such that it has produced stems or runners which overlap adjacent similar growth over 85 percent of the entire area as determined by random sampling on a square yard basis with no bare spot exceeding 24 square inches.

3.8.2 Maintenance

The Contractor shall be responsible for the turfed areas while grass is becoming established to the point of acceptance by the Contracting Officer. During establishment and prior to acceptance of the turfed areas, the Contractor shall repair rainwash damage, if any, to the completed levee, berm or borrow area slopes at no additional cost to the Government. The turfed areas shall be maintained by mowing for the life of the contract (i.e. until final acceptance). Turfed areas shall be kept mowed to a height no taller than 3 and 6 inches above the earth surface. Should the Contractor fail to mow the turfed areas to the limits as specified above, the Government will assume the responsibility for the mowing and deduct the cost thereof from any payments due the Contractor.

3.9 TURF ESTABLISHMENT PERIOD

The Contractor shall have 1 year from commencement of establishment of turf until final acceptance. After such time, if acceptable turf has not been established, the Contracting Officer may terminate the contract under the default clause and take a deductive credit for the unfinished work.

3.10 INSPECTION AND ACCEPTANCE

Acceptance of the turfed areas will be determined by visual inspection after growth has been established. Turfing will be considered to be completed when the areas to be turfed show that growth of the specified grass has reached a point of maturity such that it has produced stems or runners which overlap adjacent similar growth over 85 percent of the entire area as determined by random sampling on a square yard basis with no bare spot exceeding 24 inches. Existence of rainwash damage or dead and dying turf will not be acceptable. No payment for turfing will be made until acceptance by the Contracting Officer or his/her representative.

3.10.1 Areas Requiring Returfing

Areas being inspected for completion that do not meet the requirements for completion, as specified herein above shall be returfed at no additional cost to the Government.

-- End of Section --

US Army Corps
of Engineers®

CAIRO SLOPE FLATTENING
CAIRO DRAINAGE DISTRICT
ALEXANDER COUNTY, IL

Solicitation: W912EQ-14-R-0005

AUGUST 2014

THIS PROJECT WAS DESIGNED BY THE MEMPHIS DISTRICT CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER 1110-1-8152. SIGNATURES INDICATE OFFICIAL RECOMMENDATION OF ALL DRAWINGS IN THIS SET.

APPROVED BY:

4/1/2014

CHIEF ENGR & CONST DIVISION

US Army Corps
of Engineers®

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

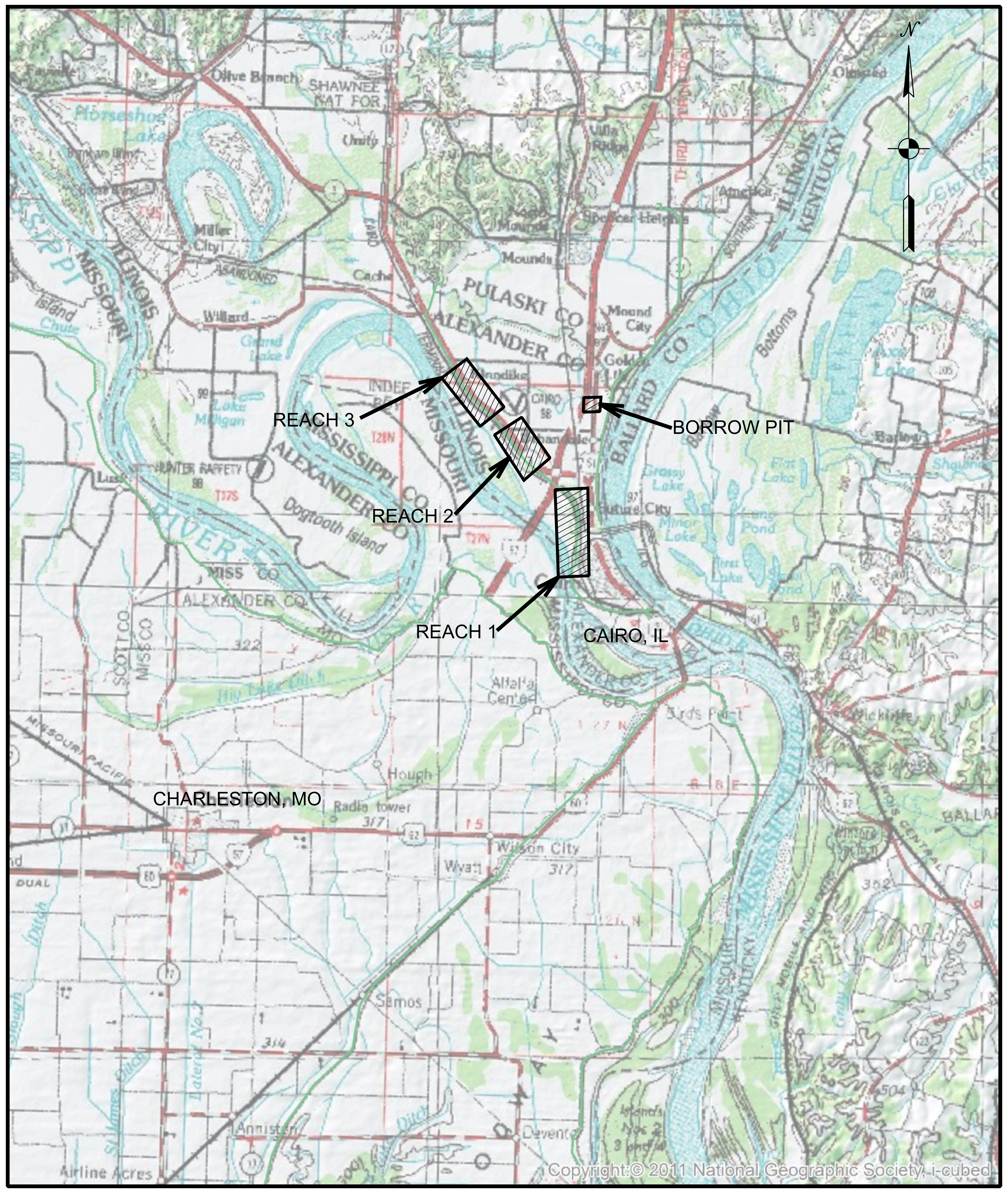
DESIGNED BY: JAMES MARKOWSKI, P.E.
DWN BY: JDN
CHD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 0.0833 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: G001
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XXXXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

COVER SHEET

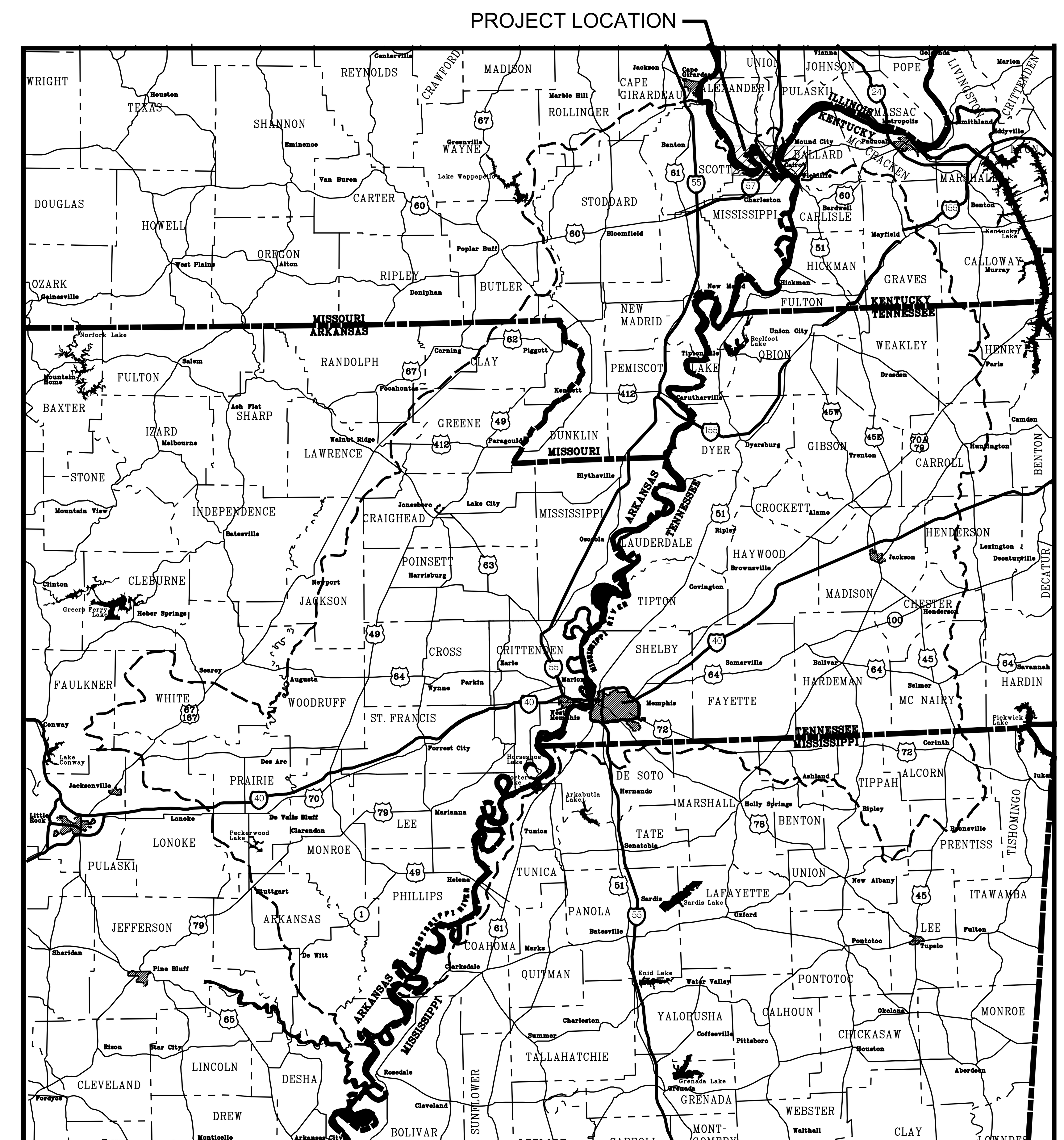
Sheet ID
G-001

auto_time



PROJECT LOCATION MAP

0 2 MILES 4 MILES
1 INCH = 2 MILES



LEGEND

- MEMPHIS DISTRICT BOUNDARY
- U.S. HIGHWAY
- COUNTY LINE
- STATE BOUNDARY
- INTERSTATE HIGHWAY
- PROJECT LOCATION

N

VICINITY MAP

50 40 30 20 10 0 50 MILES

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

DESIGNED BY: JAMIE NABAKOWSKI, P.E.		DATE: AUGUST 2014
DWN BY: JDN	CKD BY: DSC	SOLICITATION NO.: W912EQ-14-R-0005
SUBMITTED BY: THOMAS L. MINYARD, P.E.		CONTRACT NO.:
PLOT SCALE: 11.6000 sf / in.	PLOT DATE: 3/28/2014	FILE NUMBER: MR-P-XX/XXX
SIZE: ANSI D	FILE NAME: G002Cairo_Slurry-Trench_G-002.dgn	

CAIRO SLOPE FLATTENING

MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
LOCATION AND VICINITY MAPS

Sheet ID
G-002

NO.	INDEX OF DRAWINGS
G-001	COVER SHEET
G-002	LOCATION AND VICINITY MAPS
G-003	INDEX, LEGEND AND ABBREVIATIONS
B-001	BORROW PIT BORING PROFILE - URBANDALE, IL
B-002	BORING LEGEND
C-101	REACH 1 PLAN AND PROFILE - STA M13 4+00 TO STA M13 29+00
C-102	REACH 1 PLAN AND PROFILE - STA M13 29+00 TO STA M14 2+00
C-103	REACH 1 PLAN AND PROFILE - STA M14 2+00 TO STA M14 25+00
C-104	REACH 2 PLAN AND PROFILE - STA M15 40+00 TO STA M16 12+00
C-105	REACH 2 PLAN AND PROFILE - STA M16 12+00 TO STA M16 40+00
C-106	REACH 3 PLAN AND PROFILE - STA M17 0+00 TO STA M17 24+00
C-107	REACH 3 PLAN AND PROFILE - STA M17 24+00 TO STA M17 49+00
C-108	REACH 3 PLAN AND PROFILE - STA M17 49+00 TO STA M18 22+00
C-109	REACH 3 PLAN AND PROFILE - STA M18 22+00 TO STA M18 32+00
C-110	LEVEE CROWN RESURFACING AND BORROW HAUL ROUTES
C-111	TABLES
C-112	BORROW PIT PLAN AND PROFILE
C-301	TYPICAL SECTION WITH END TREATMENTS
C-302	CUT SECTIONS AND CROWN DETAIL
C-501	EROSION CONTROL DETAILS
C-502	LEVEE BENCHING DETAILS
C-503	RAMP BENCHING DETAILS
C-504	MISSISSIPPI RIVER HYDROGRAPH

TABULATION OF BENCHMARKS

BENCH MARKS	ELEVATION NGVD29	DESCRIPTION
T-4-13-94	328.683	TO REACH THE MARK FROM THE INTERSECTION OF THE I-57 AND HWY #3 SOUTH OF URBANDALE, IL., PROCEED WEST ON #3 TO A GRAVEL ROAD RUNNING WEST. PROCEED WEST 200f TO THE CAIRO-CACHE LEVEE AND THEN NW ALONG THE LEVEE 2.3 MILES OTT LMP 18/19 AND THE MARK. THE MARK IS A COE TYPE F ALUMINUM ROD AND DISK STAMPED T-4-13-94 SET FLUSH WITH THE GROUND. THE MARK IS 14.2f S/W OF THE S/W OF A SET OF RR TRACKS, 1.0f S/W OF A WITNESS POST, 35f N/E OF LM 18/19, AND 49f N/E OF THE C/L OF THE LEVEE.
T-4-12-94	329.945	TO REACH MARK FROM INTERSECT OF I-57 AND HWY NO 3 S OF URBANDALE, GO W ON HWY 3, 1.2 MI TO GRAV RD RUNNING W, GO W 200 FT TO CAIRO CACHE LEVEE, THEN NW 1.1 MI TO LMP 17/18 AND MARK. MARK COE ALUM ROD AND DISK STAMPED T-4-12-94 SET FLUSH W TIH GRND. MARK IS 9.0 FT SW OF SW RAIL OF 2 SETS OF RR TRACKS, 1.0 FT SW OF WITNESS POST, 28 FT NE OF LMP 17/18, AND 41 FT NE OF C/L OF LEVEE.
T-4-11-94	329.895	TO REACH MARK FROM INTERSECT OF I-57 AND HWY 3 S OF URBANDALE, GO W ON HWY 3 0.2 MI TO GRAV RD RUNNING W, GO W 200 FT TO CAIRO CACHE LEVEE, THEN NW 250 FT TO LMP 16/17 AND MARK. MARK IS COE ALUM ROD AND DISK STAMPED T-4-11-94 SET FLUSH WIT H GRND. MARK IS 10.3 FT SW OF SW TRACK OF RAILLINE, 23.5 FT NE OF LMP.
T-4-10-94	326.656	TO REACH MARK FROM INTERSECT OF CAIRO CACHE LEVEE AND HWY 51 AT S END OF CAIRO, GO NW ON LEVEE 4.3 MI TO LMP 15/16 AND MARK. MARK IS COE ALUM ROS AND DISK SET INSIDE ALUM ACCESS COVER. BOTH DISK AND COVER STAMPED T-4-10-94. MARK IS 82 FT N E OF C/L OF LEVEE, 63 FT NE OF LMP 15/16, 1.0 FT SW OF WITNESS POST AND 9 FT SW OF S TRACK OF RR TRACK.
T-4-9-94	328.220	TO REACH MARK FROM INTERSECT OF CAIRO CACHE LEVEE AND HWY 51 AT S END OF CAIRO, GO NW ON LEVEE 3.3 MI TO LMP 14/15 AND MARK. MARK IS COE ALUM ROD AND DISK STAMPED T-4-9-94 SET FLUSH WITH GRND. MARK IS 4 FT W OF TWIN 10" HB, 1.0 FT W OF WIT NESS POST, 182 FT E OF C/L OF LEVEE AND 172 FT E OF LMP 14/15.
T-4-8-94	320.712	TO REACH MARK FROM INTERSECT OF CAIRO CACHE LEVEE AND HWY NO 51 AT S END OF CAIRO, GO NW ON LEVEE 2.3 MI TO LMP 13/14 AND MARK. MARK IS COE ALUM ROD AND DISK STSAMPED T-4-8-94 SET FLUSH WITH GRND. MARK IS 253 FT N ON LEVEE FROM LMP 13/14, AND 116 FT E FROM C/L OF LEVEE.
T-5-2-94	326.353	TO REACH MARK FROM INTERSECT OF CAIRO CACHE LEVEE AND HWY 51 AT S EDGE OF CAIRO, ILL., GO NW ON LEVEE 1.3 MI TO LMP 12/13 AND MARK. MARK IS COE ALUM ROD AND DISK STAMPED T-5-2-94 SET FLUSH WITH GRND. MARK IS 67.6 FT N AND 19 FT W OF LMP 12 /13, 82.6 FT N OF C/L OF LEVEE.

GENERAL NOTES:

1. HORIZONTAL COORDINATES REFERENCE UTM ZONE 16, NAD83 IN US SURVEY FEET UNLESS OTHERWISE NOTED.

2. ALL ELEVATIONS ON CONSTRUCTION DRAWINGS REFER TO NGVD29 UNLESS OTHERWISE NOTED.

3. AERIAL PHOTOGRAPHY FLOWN IN 2012 AND MAY NOT REFLECT CONDITIONS AT THE TIME OF CONSTRUCTION; DESIGN FOR THIS PROJECT IS BASED ON A 2002 SURVEY PERFORMED BY EMC INC., CONTRACT #DACW66-02-D-003, TASK ORDER 24. SAID SURVEY WAS DEVELOPED USING NGVD29.

4. SITE MAY BE ACCESSED FROM ILLINOIS HWY. 3. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE TRAFFIC CONTROL STANDARDS AS REQUIRED BY ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

5. NOTATION SHOWN ON PLANS AS STATION m13 XX+XX REPRESENTS A LOCATION XXXX FT. FROM THE BEGINNING OF LEVEE MILE 13.

6. CONTRACTOR MAY BE REQUIRED TO PERFORM MINOR EARTHWORK TO ACCESS SITE WITH EQUIPMENT. ANY EARTHWORK REQUIRED TO ACCESS SITE WILL BE INCIDENTAL TO MOBILIZATION.

7. AFTER AN AREA HAS BEEN CLEARED AND GRUBBED, THE CONTRACTOR WILL MAINTAIN THAT AREA FOR THE DURATION OF THE PROJECT SO THAT THE ONLY VEGETATION ALLOWED TO GROW WITHIN THE AREA IS GRASS.

8. CONTRACTOR WILL NOT DISTURB ANY LEVEE RAMPS BEYOND WHAT IS REQUIRED FOR NORMAL CONSTRUCTION ACTIVITIES. AREAS THAT WILL REQUIRE ALTERATIONS TO RAMPS ARE NOTED ON PLAN AND PROFILE SHEETS.

9. TRANSITION REQUIRED BETWEEN EXISTING AND DESIGN GRADE AT ALL UPSTREAM AND DOWNSTREAM LOCATIONS WHERE SLOPE CONSTRUCTION STARTS/STOPS. MAKE TRANSITION SLOPE NO STEEPER THAN 1V:10H.

10. MAINTAIN EXISTING LEVEE CROWN ELEVATIONS UNLESS OTHERWISE NOTED ON PLAN AND PROFILE SHEETS.

11. ALL BASELINE TO CONROL LINE OFFSET DISTANCES ARE MEASURED PERPENDICULAR TO THE BASELINE UNLESS OTHERWISE NOTED.

12. HAUL ROADS ARE TO BE USED TO TRANSPORT THE BORROW MATERIAL FROM BORROW PIT TO THE SLOPE RESTORATION CONSTRUCTION AREA ALONG THE LEVEE. ALL HAUL ROUTES MUST BE APPROVED BY THE CONTRACTING OFFICER.

13. DO NOT DISTURB ANY EXISTING UTILITIES. DAMAGE TO UTILITIES OR INTERRUPTIONS IN SERVICE CAUSED BY CONSTRUCTION WILL BE REPAIRED AT CONTRACTOR'S EXPENSE. ILLINOIS "CALL BEFORE YOU DIG" - 1-800-892-0123.

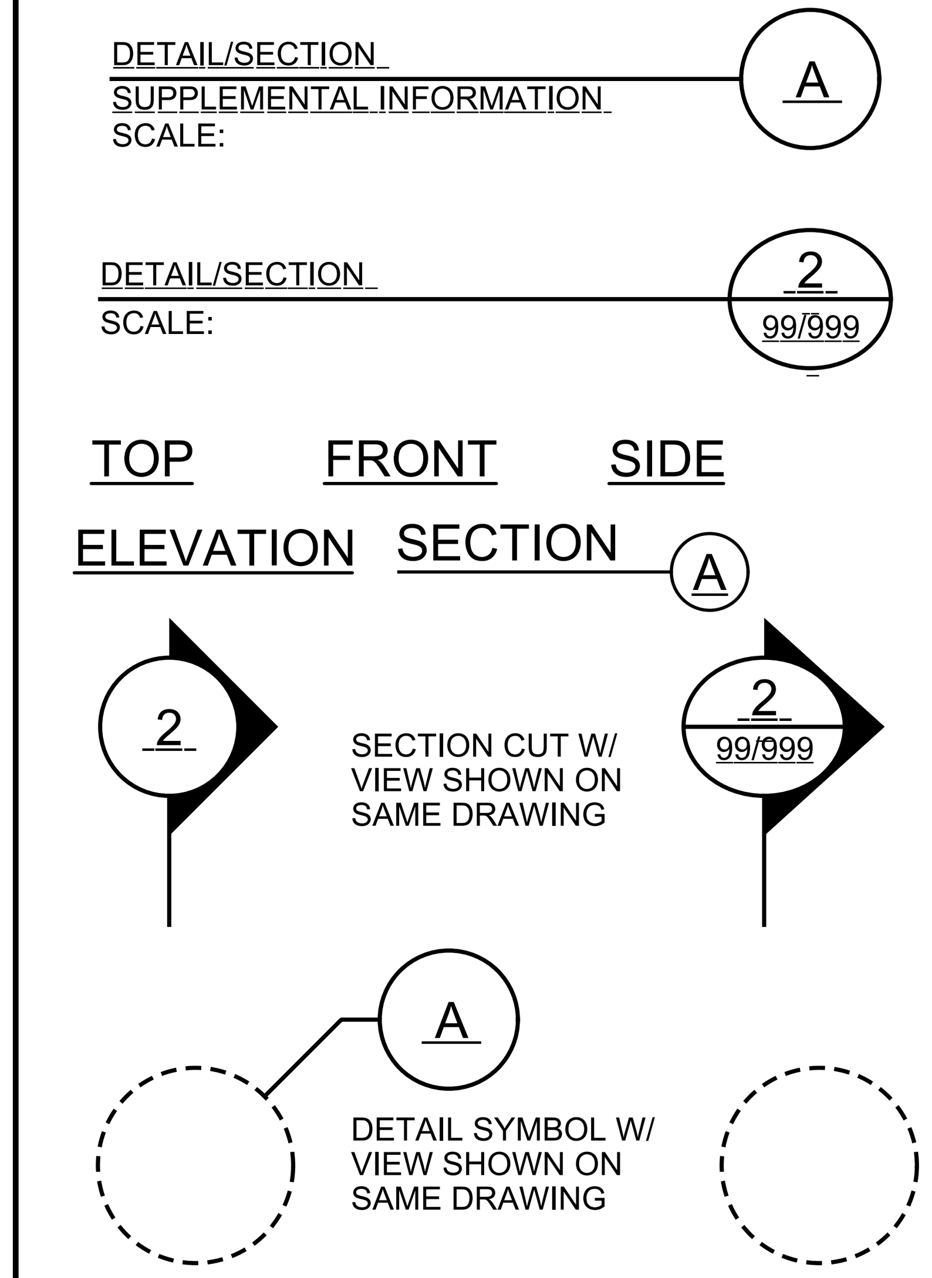
14. STATIONING IS BASED ON THE GROUND DISTANCE WHERE GRID DISTANCE=GROUND DISTANCE x COMBINED GRID FACTOR; COMBINED GRID FACTOR=1.000061435.

15. ALL MATERIAL PLACED FOR THIS PROJECT WILL BE SEMI-COMPACTED RANDOM FILL, UNLESS OTHERWISE NOTED. ALL FILL IS TO BE OBTAINED FROM THE GOVERNMENT PROVIDED BORROW SOURCE OR THE EXISTING LEVEE.

16. UNLESS OTHERWISE NOTED, THE TOP OF THE 1V:4H LEVEE SLOPE WILL BE ESTABLISHED AT A DISTANCE OF 10 FT FROM THE CONTROL LINE TOWARDS THE RS OF THE LEVEE, MEASURED PERPENDICULARLY FROM THE CONTROL LINE.

17. UNLESS OTHERWISE NOTED, THE FINISHED ELEVATION OF THE TOP OF THE 1V:4H LEVEE SLOPE WILL MATCH THE EXISTING LEVEE CROWN ELEVATION. THE GRAVEL RE-SURFACING WILL THEN BE APPLIED ATOP THE NEWLY FORMED LEVEE CROWN. THE EXISTING LEVEE CROWN ELEVATION IS PROVIDE ON THE PROFILE SHEETS BUT WILL BE FIELD VERIFIED BY THE CONTRACTOR AND APPROVED BY THE COR.

GENERAL CROSS-REFERENCING SYMBOLS



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SECTION/DETAIL TITLE ON ANOTHER DRAWING (CENTERED UNDER SECTION/DETAIL)

VIEW SUBTITLE (CENTERED UNDER EACH VIEW)

SECTION CUT W/ VIEW SHOWN ON ANOTHER DRAWING

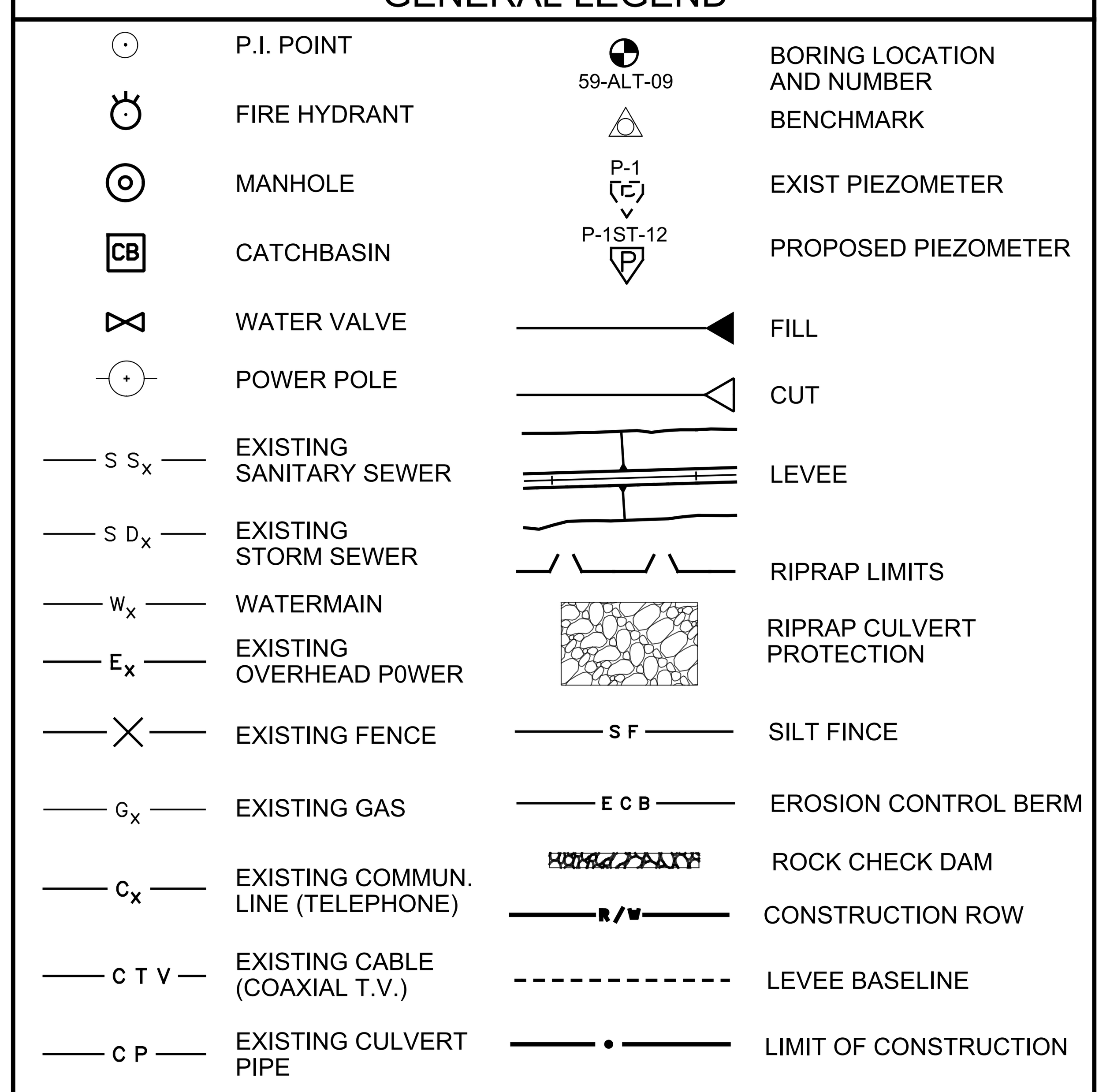
DETAIL SYMBOL W/ VIEW SHOWN ON ANOTHER DRAWING

ABBREVIATIONS

* UNLESS OTHERWISE NOTED ON EACH SHEET

APPROX	APPROXIMATE	LS	LANDSIDE
ALT W/	ALTERNATE WITH	MAX	MAXIMUM
ALUM	ALUMINUM	MIN	MINIMUM
BITUM	BITUMINOUS	MIRR	MIRRORED
BOT	BOTTOM	MISC	MISCELLANEOUS
C/L	CONTROL LINE	NF	NEAR FACE
B/L	LEVEE BASELINE	NO	NUMBER
EME	EXCAVATED MATERIAL EMBANKMENT	OF	OUTSIDE FACE
CONC	CONCRETE	OC	ON CENTER
DIA	DIAMETER	RS	RIVERSIDE
DWG	DRAWING	SAN	SANITARY
CMP	CORRUGATED METAL PIPE	SPEC	SPECIFICATIONS
EJ	EXPANSION JOINT	SST	STAINLESS STEEL
EL	ELEVATION	T&B	TOP AND BOTTOM
EW	EACH WAY	TYP	TYPICAL
EXIST	EXISTING	UNO	UNLESS NOTED OTHERWISE
FF	FAR FACE	UNGD	UNDERGROUND
FES	FLARED END SECTION	W	WIDTH
GALV	GALVANIZED	WM	WATER MAIN
HT	HEIGHT		
IF	INSIDE FACE		
LG	LONG		

GENERAL LEGEND



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MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
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MEMPHIS, TENNESSEE

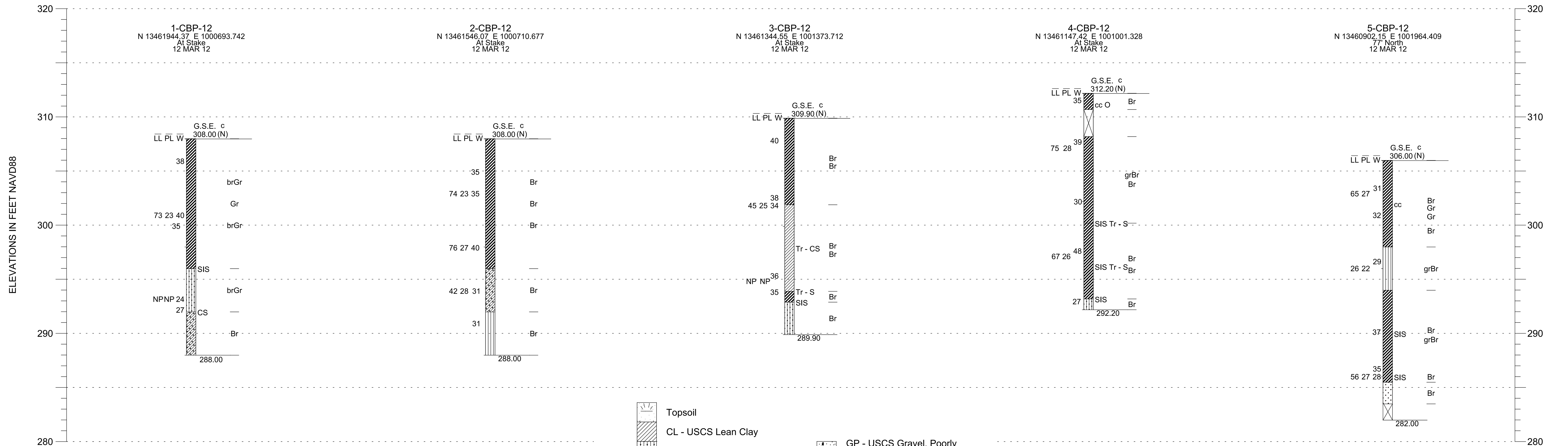
DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 1.00 sf / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: G003
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

INDEX, LEGEND, AND ABBREVIATIONS

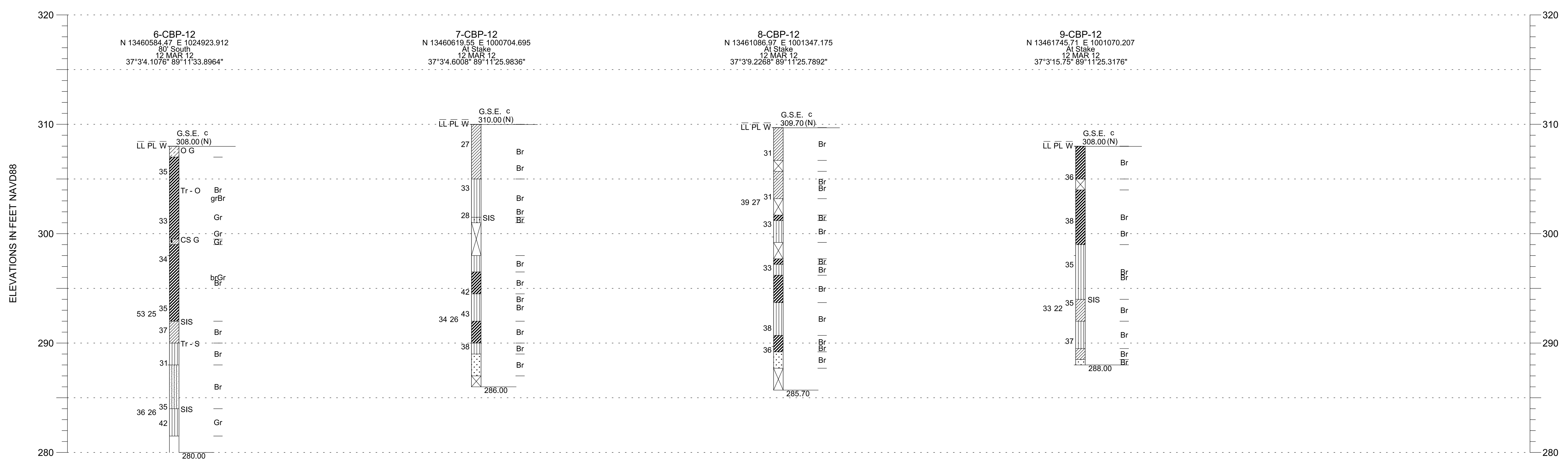
Sheet ID
G-003

auto_time



Topsoil
CL - USCS Lean Clay
SM - Silty Sand
CH - Fat Clay
ML - Inorganic Silt
SP - Sand, Poorly Graded
GP - USCS Gravel, Poorly Graded
FILL - Fill (made ground)
NS - No Sample
SC - Clayey Sand

NOTES:
1. SEE SHEET C-112 FOR BORING LOCATIONS.
2. BORING INFORMATION TAKEN USING NAVD88.



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SOLICITATION NO.: W912EQ-14-R-0005
SUBMITTED BY: THOMAS L. MINYARD, P.E.
CONTRACT NO.:
PLOT SCALE: 10.0000 ft / in.
PLOT DATE: 3/28/2014
FILE NUMBER: MR-P-XX/XXX
SIZE: ANSI D
FILE NAME: B001

CAIRO SLOPE FLATTENING

MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

BORROW PIT BORING PROFILE
URBANDALE, IL

Sheet ID
B-001

auto_time

UNIFIED SOIL CLASSIFICATION

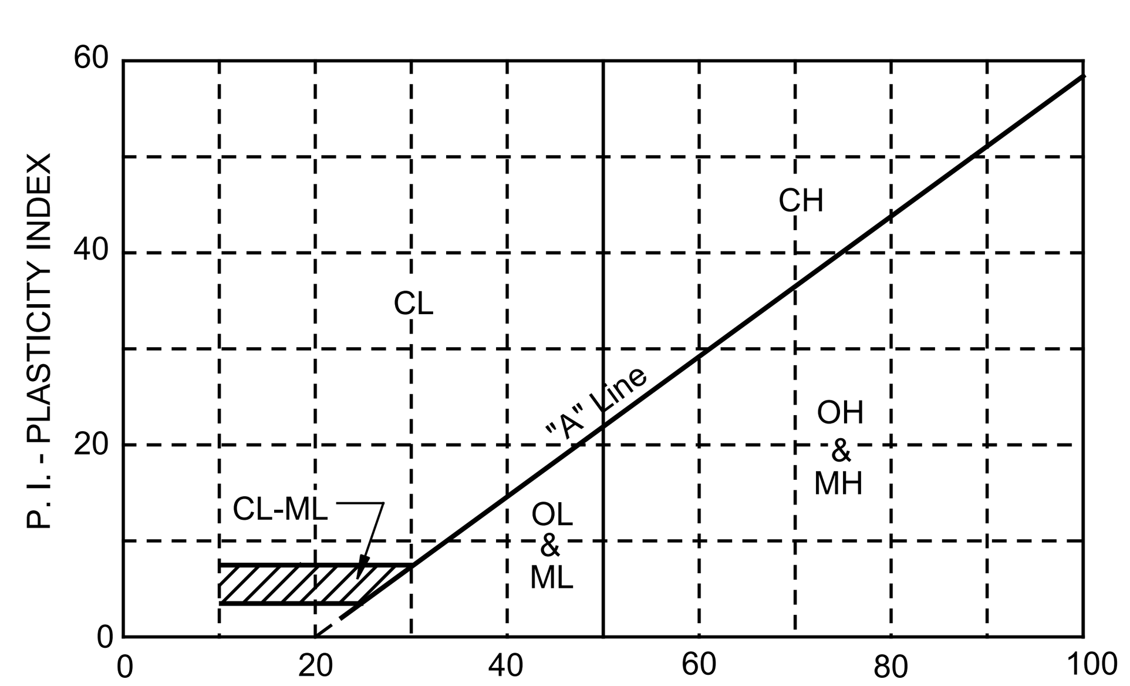
MAJOR DIVISION			TYPE	LETTER SYMBOL	SYMBOL	TYPICAL NAMES
COARSE GRAINED SOILS More than half of material is larger than No. 200 sieve size	GRAVEL	More than half of coarse fraction is larger than No. 4 sieve size	CLEAN GRAVEL (Little or No Fines)	GW		GRAVEL, Well Graded, gravel-sand mixtures, little or no fines
				GP		GRAVEL, Poorly Graded, gravel-sand mixtures, little or no fines
			GRAVEL WITH FINES (Appreciable Amount of Fines)	GM		SILTY GRAVEL, gravel-sand-silt mixtures
				GC		CLAYEY GRAVEL, gravel-sand-clay mixtures
	SAND	More than half of coarse fraction is smaller than No. 4 sieve size	CLEAN SAND (Little or No Fines)	SW		SAND, Well Graded, gravelly sands
				SP		SAND, Poorly Graded, gravelly sands
			SAND WITH FINES (Appreciable Amount of Fines)	SM		SILTY SAND, sand-silt mixtures
				SC		CLAYEY SAND, sand-clay mixtures
FINE GRAINED SOILS	More than half the material is smaller than No. 200 sieve size		SILTS AND CLAYS (Liquid Limit <50)	ML		SILT & very fine sand, silty or clayey fine sand or clayey silt with slight plasticity
				CL		LEAN CLAY; Sandy Clay; Silty Clay; of low to medium plasticity
				OL		ORGANIC SILTS, and organic silty clays of low plasticity
			SILTS AND CLAYS (Liquid Limit >50)	MH		SILT, fine sandy or silty soil with high plasticity
				CH		FAT CLAY, inorganic clay of high plasticity
				OH		ORGANIC CLAYS of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS				Pt		PEAT, and other highly organic soil
WOOD				Wd		WOOD
MIXED SAMPLE				VM		Variable mixed silts, clays and sands
NO SAMPLE						

NOTE: Soils possessing characteristics of two groups are designated by combinations of group symbols.

DESCRIPTIVE SYMBOLS

COLOR	
COLOR	SYMBOL
TAN	T
YELLOW	Y
RED	R
BLACK	BK
GRAY	Gr
LIGHT GRAY	lGr
DARK GRAY	dGr
BROWN	Br
LIGHT BROWN	lBr
DARK BROWN	dBr
BROWNISH - GRAY	brGr
GRAYISH - BROWN	grBr
GREENISH - GRAY	gnGr
GRAYISH - GREEN	grGn
GREEN	Gn
BLUE	Bl
BLUE - GREEN	BlGn
WHITE	Wh
MOTTLED	Mot

CONSISTENCY FOR COHESIVE SOILS		
CONSISTENCY	COHESION IN LBS./SQ. FT. FROM UNCONFINED COMPRESSION TEST	SYMBOL
VERY SOFT	< 250	vSo
SOFT	250 - 500	So
MEDIUM	500 - 1000	M
STIFF	1000 - 2000	St
VERY STIFF	2000 - 4000	vSt
HARD	> 4000	H



L.L. - LIQUID LIMIT

PLASTICITY CHART

For classification of fine - grained soils

MODIFICATIONS	
MODIFICATION	SYMBOL
Traces	Tr -
Fine	F
Medium	M
Coarse	C
Concretions	cc
Rootlets	rt
Lignite fragments	lg
Shale fragments	sh
Sandstone fragments	sds
Shell fragments	slf
Organic matter	O
Clay strata or lenses	CS
Silt strata or lenses	SIS
Sand strata or lenses	SS
Sandy	S
Gravelly	G
Boulders	B
Slickensides	SL
Wood	Wd
Oxidized	Ox
Saturated	Sat
Lumps of Clay	Clp

NOTES:	
FIGURES TO THE LEFT OF BORING UNDER COLUMN "W OR D_{10}"	
	Are natural water contents in percent dry weight
	When underlined denotes D_{10} size in mm *
FIGURES TO THE LEFT OF BORING UNDER COLUMNS "LL" AND "PL"	
	Are liquid and plastic limits, respectively
SYMBOLS TO THE LEFT OF BORING	
(water surface symbol)	Ground water surface and date observed
(C)	Denotes location of consolidation test * *
(S)	Denotes location of consolidation - drained direct shear test * *
(R)	Denotes location of consolidation - undrained triaxial compression test * *
(Q)	Denotes location of unconsolidated - undrained triaxial compression test * *
(T)	Denotes location of sample subjected to consolidation test and each of the above three types of shear tests * *
FW	Denotes free water encountered in boring or sample
o—	Denotes channel grade
FIGURES TO THE RIGHT OF BORING	
	Are values of cohesion in lbs/sq. ft. from unconfined compression tests
	In parentheses are driving resistances in blows per foot determined with a standard split spoon sampler ($1\frac{3}{8}$" I.D. 2" O.D.) and a 140 lb. driving hammer with a 30" drop
	Where underlined with a solid line denotes laboratory permeability in centimeters per second of undisturbed sample
	Where underlined with a dashed line denotes laboratory permeability in centimeters per second of sample remoulded to the estimated natural void ratio
BORING TYPE	
	SS - Split Spoon Sampler AUG - Auger TUBE - 3" or 5" Thin Wall Tube

* The D_{10} size of a soil is the grain diameter in millimeters of which 10% of the soil is finer, and 90% coarser than size D_{10}.

* * Results of these tests are available for inspection in the U.S. Army Engineer District Office if these symbols appear beside the boring logs on the drawings.

GENERAL NOTES:

1. While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristic of subsurface materials of the region are anticipated and, if encountered, such variations will not be considered as differing materially within the purview of the contract clause entitled, "Differing Site Conditions".
2. Ground water elevations shown on the borings logs represent ground water surfaces encountered in such borings on the dates shown. Absence of water surface data on certain borings indicates that no ground water data are available from the boring but does not necessarily mean that ground water will not be encountered at the locations or within the vertical reaches of such borings.
3. Consistency of cohesive soils shown on the boring logs is based on driller's log and visual examination and is approximate, except within those vertical reaches of the borings where shear strengths from unconfined compression tests are shown.

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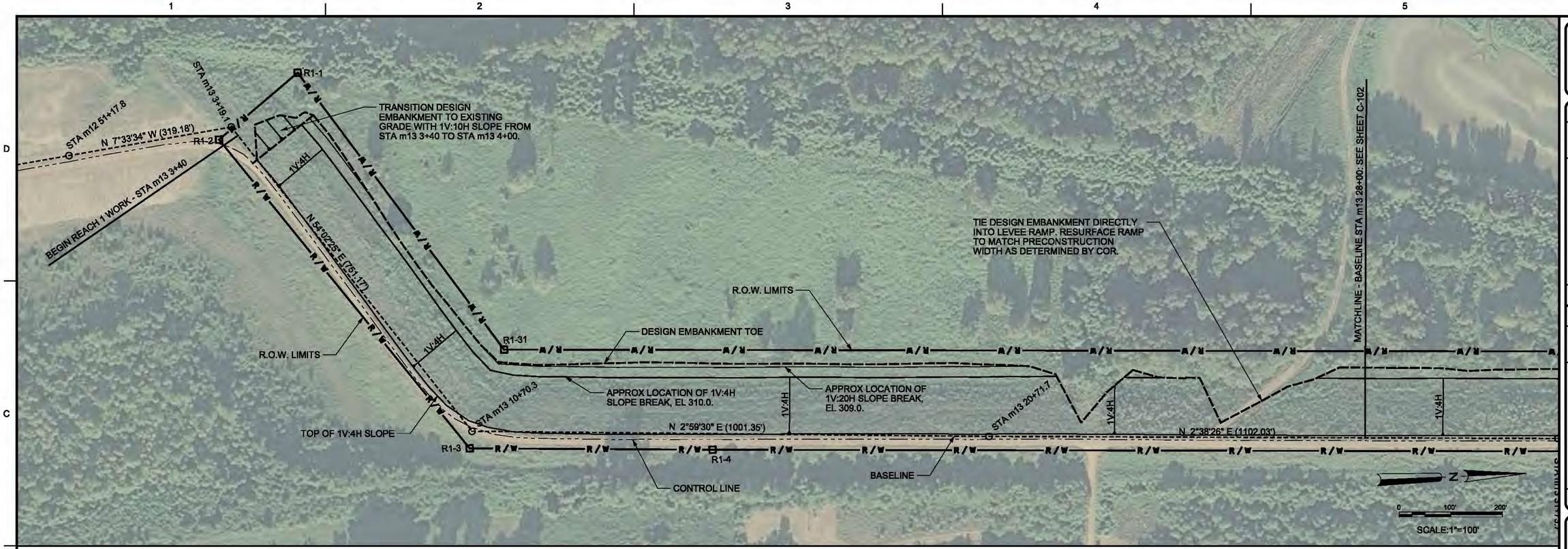
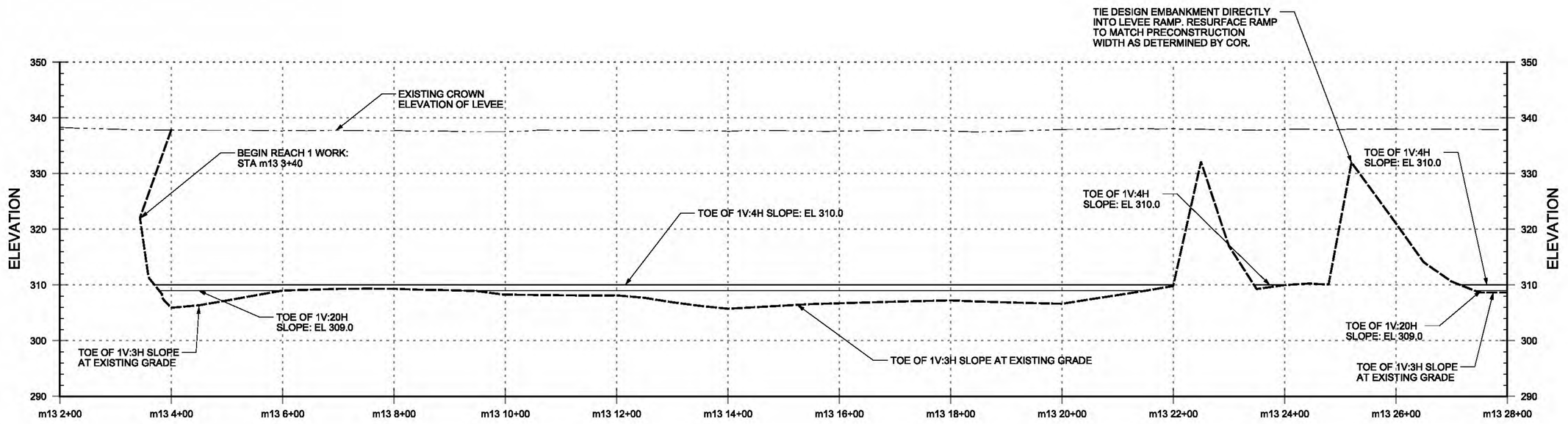
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 1.0000 sf / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: B002
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

BORING LEGEND

Sheet ID
B-002





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CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 1:1
PLOT DATE: 10/9/2014
SIZE: ANSI D
FILE NAME: C101
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MVK-ROCOCK

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
PLAN AND PROFILE
STA M13 4+00 TO STA M13 29+00
REACH 1

Sheet ID
C-101

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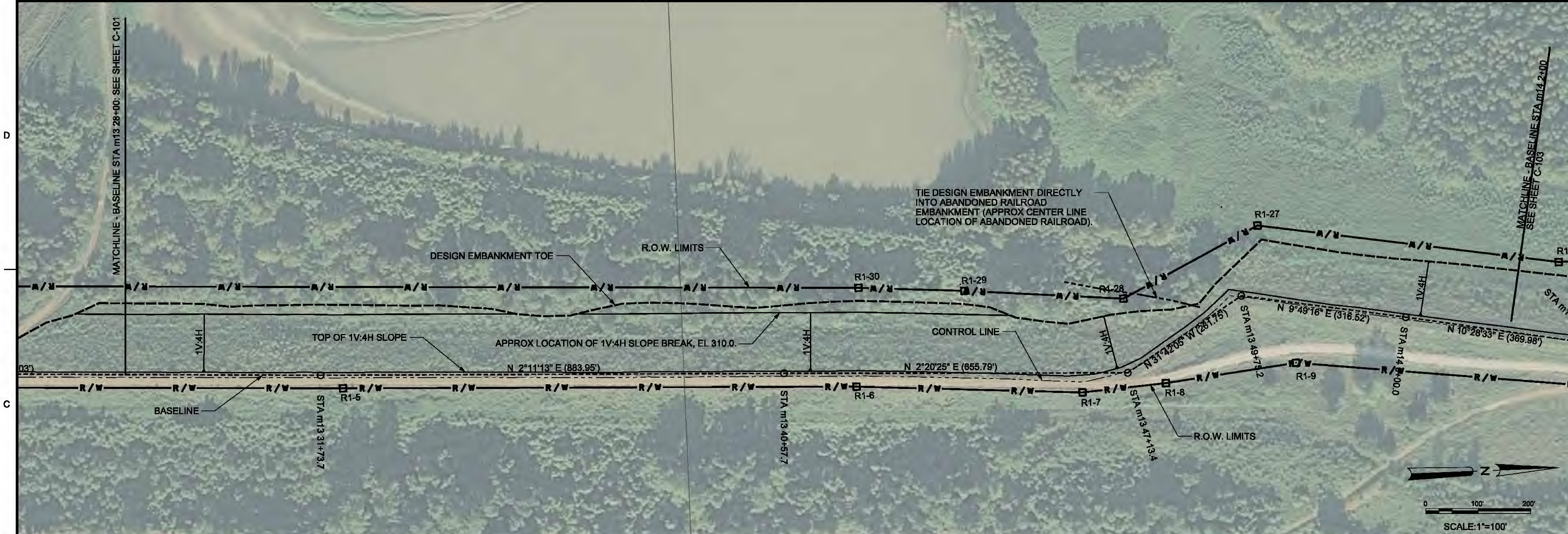

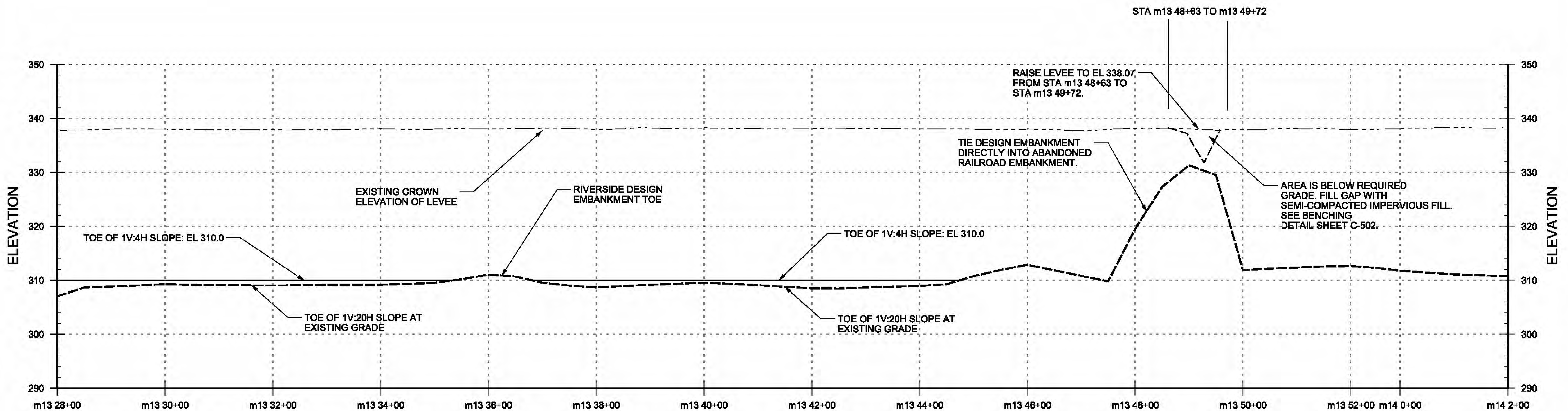

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MARK	DESCRIPTION	DATE	APPR.

DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 99.9998 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C102

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CAIRO SLOPE FLATTENING

MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

PLAN AND PROFILE
STA M13 29+00 TO STA M14 2+00
REACH 1

Sheet ID
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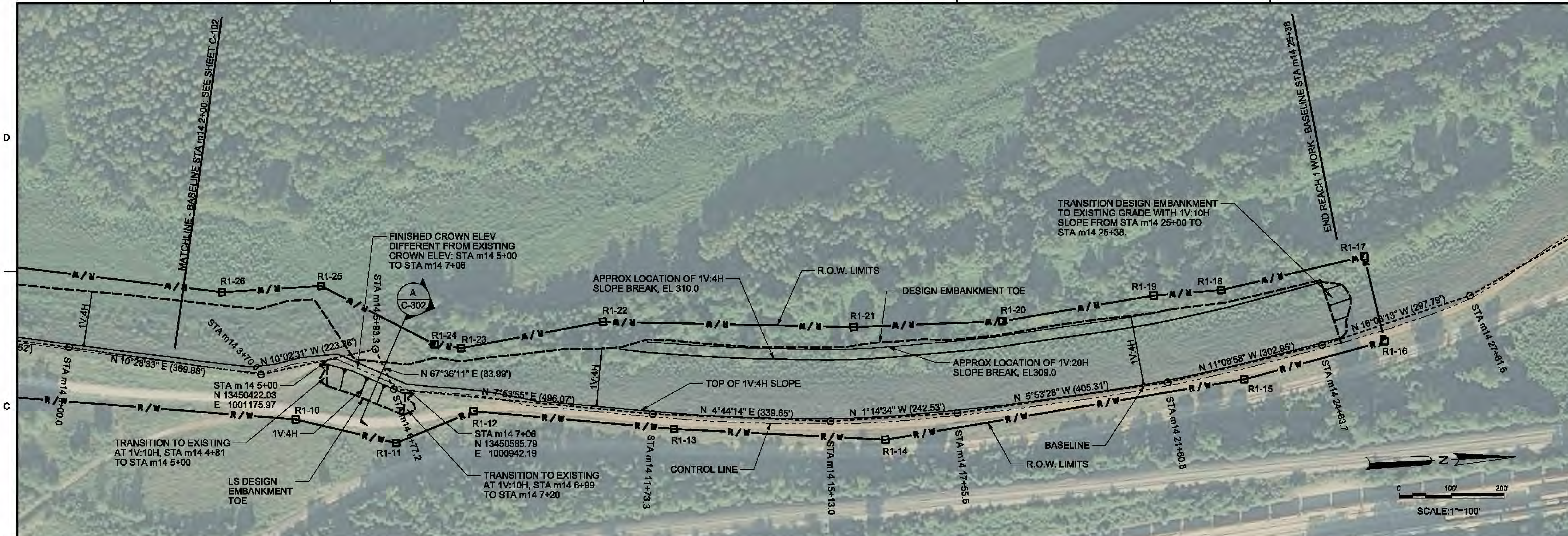

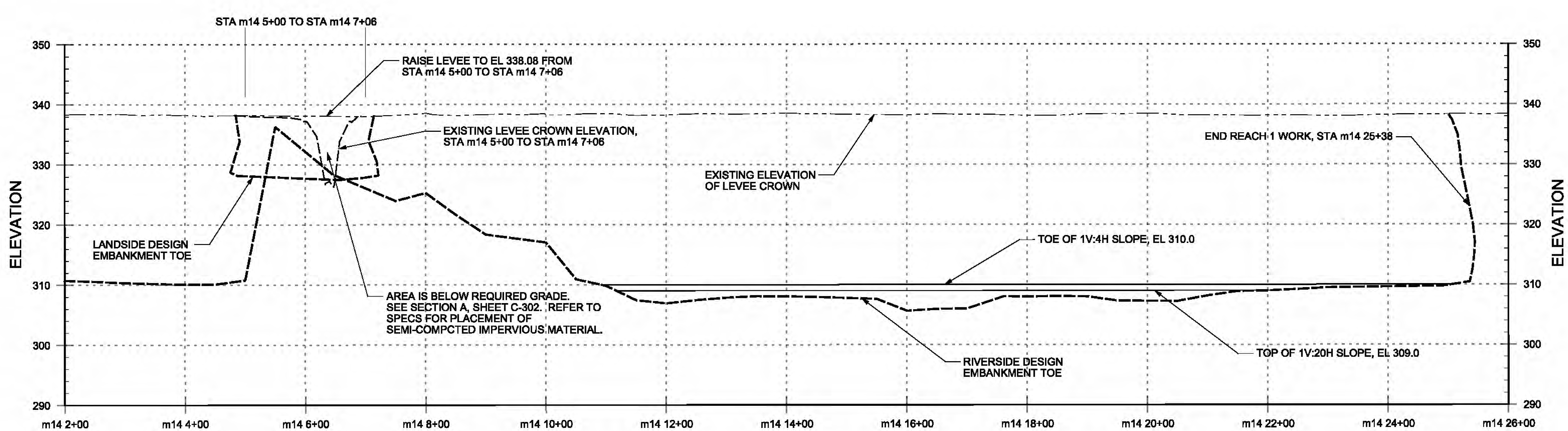

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SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 99.9998 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C103
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
PLAN AND PROFILE
STA M14 2+00 TO STA M14 25+00
REACH 1

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C-103

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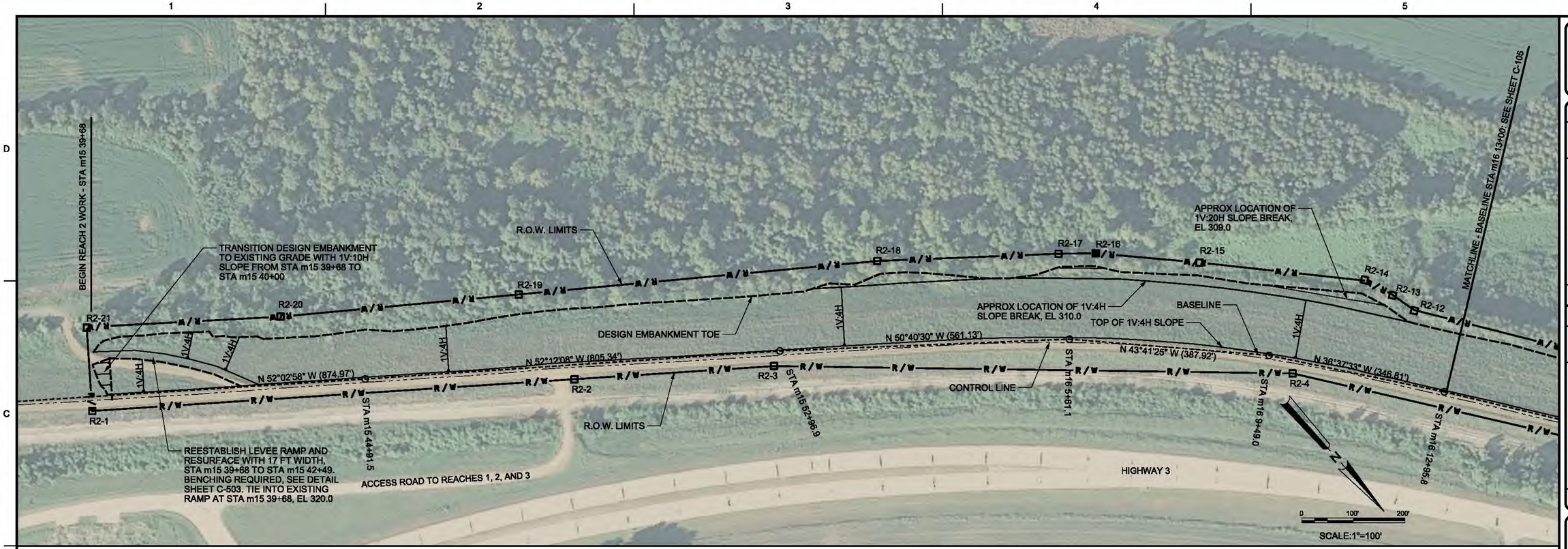

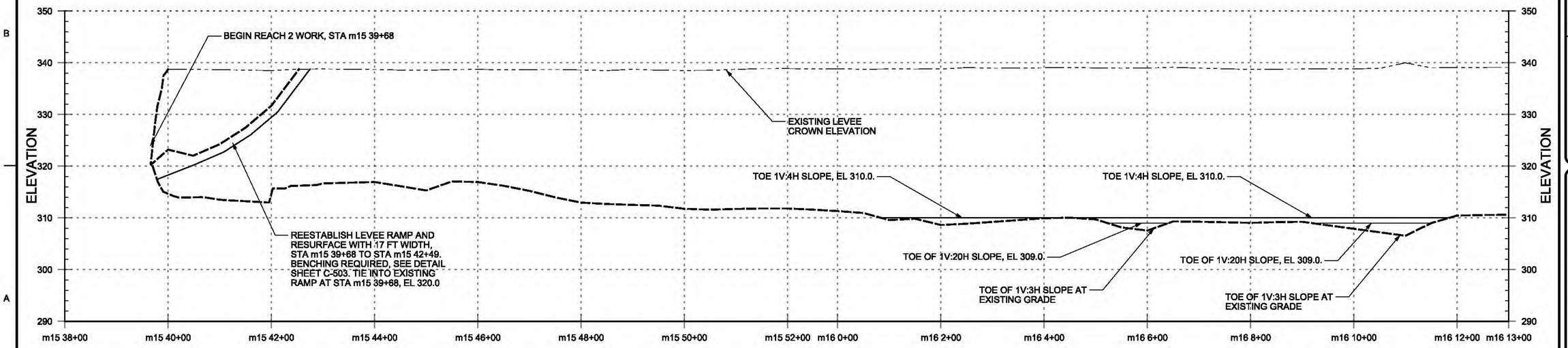

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CHCD BY: DSC
SUBMITTED BY: THOMAS L MINYARD, P.E.
PLOT SCALE: 1:1
PLOT DATE: 11/6/2014
SIZE: ANSI D
FILE NAME: C104
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MVK-ROADOCK

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CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
PLAN AND PROFILE
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REACH 2

Sheet ID
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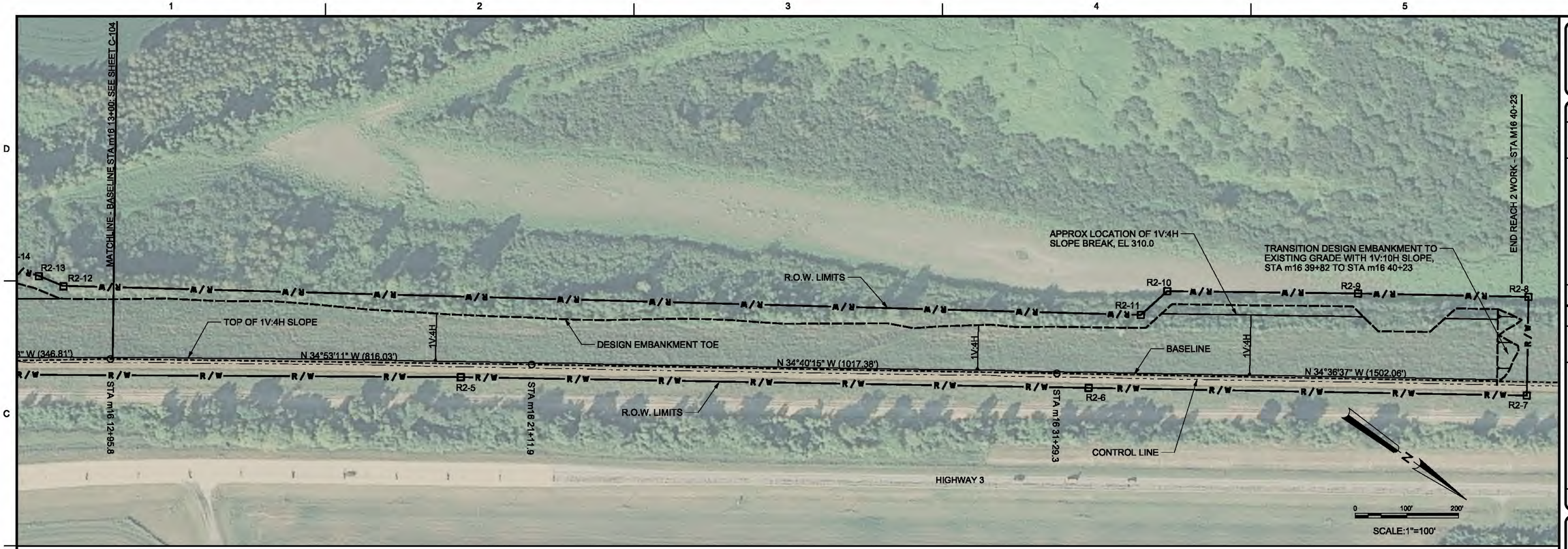

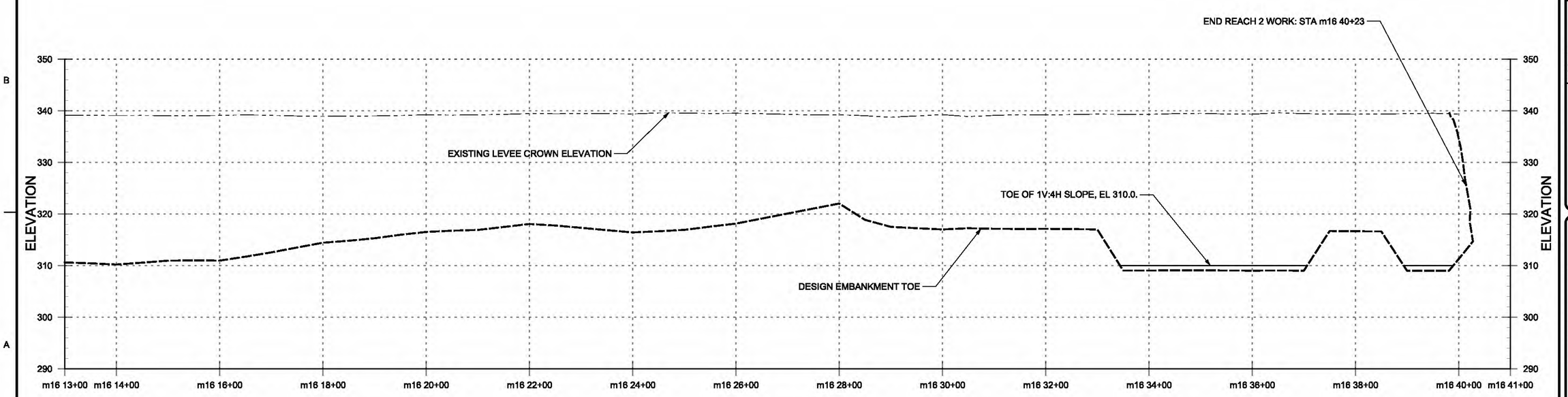

DESIGNED BY: JAIME NABAKOWSKI, P.E.	DATE: AUGUST 2014
DWN BY: JDN	CHD BY: DSC
SUBMITTED BY: THOMAS L MINTARD, P.E.	SOLICITATION NO.: W912EQ-14-R-0006
PLOT SCALE: 1:1	PLOT DATE: 8/28/2014
SHEET SIZE: ANSI D	FILE NAME: C105
	CONTRACT NO.:
	FILE NUMBER: MVK-XXXXX

U.S. ARMY CORPS OF ENGINEERS
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CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

PLAN AND PROFILE
STA M16 12+00 TO M16 40+00
REACH 2

Sheet ID
C-105

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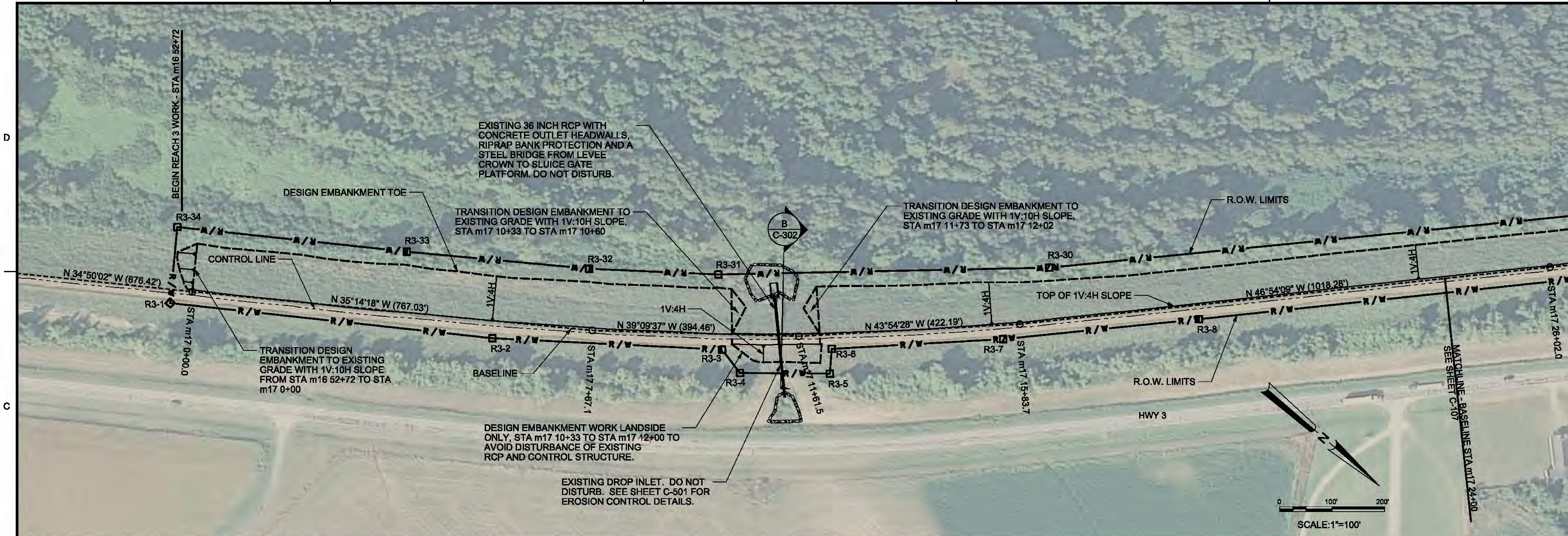

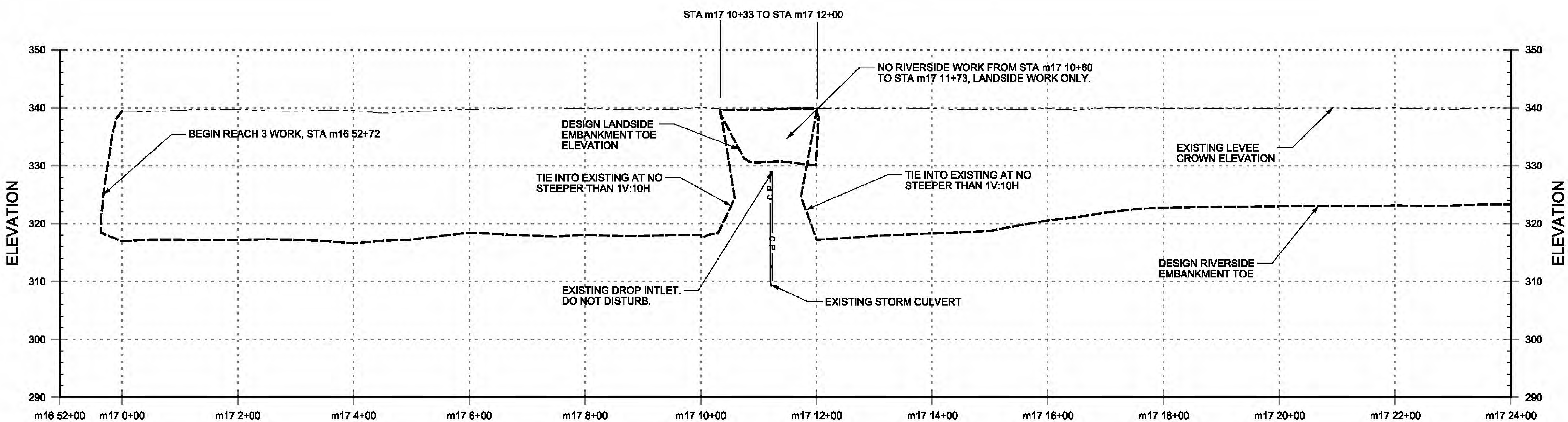

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PLOT SCALE: 99.9998 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C106
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

PLAN AND PROFILE
STA M17 0+00 TO STA M17 24+00
REACH 3

Sheet ID
C-106

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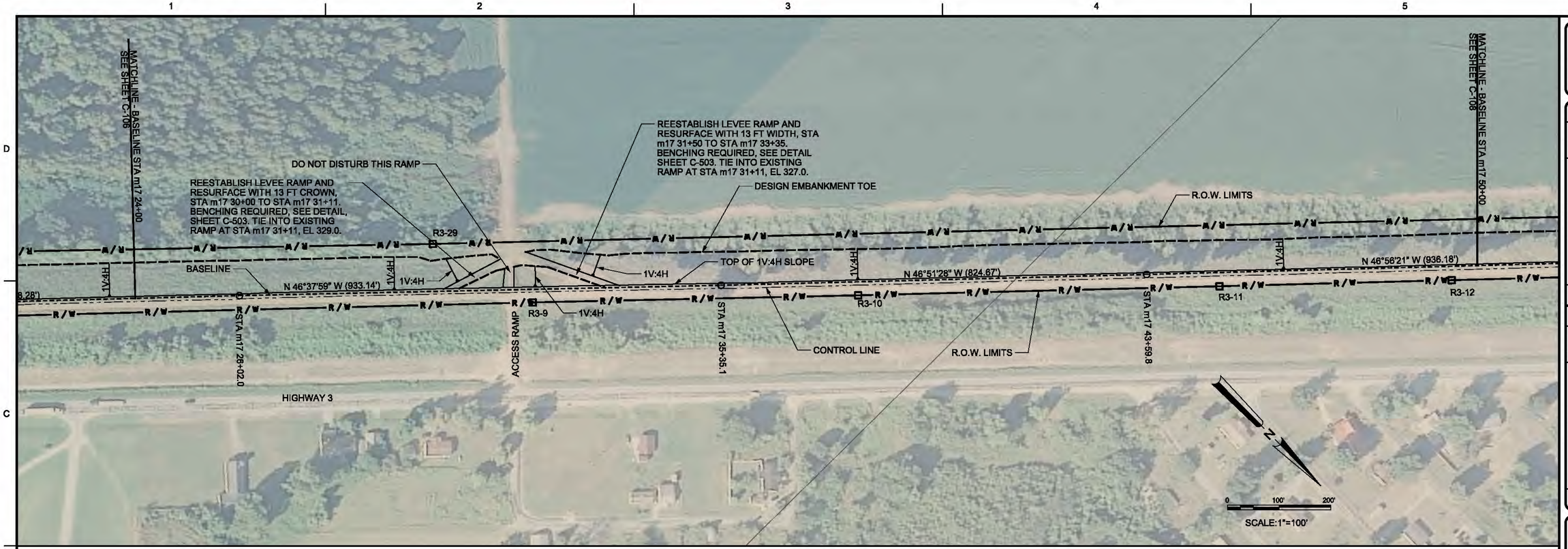

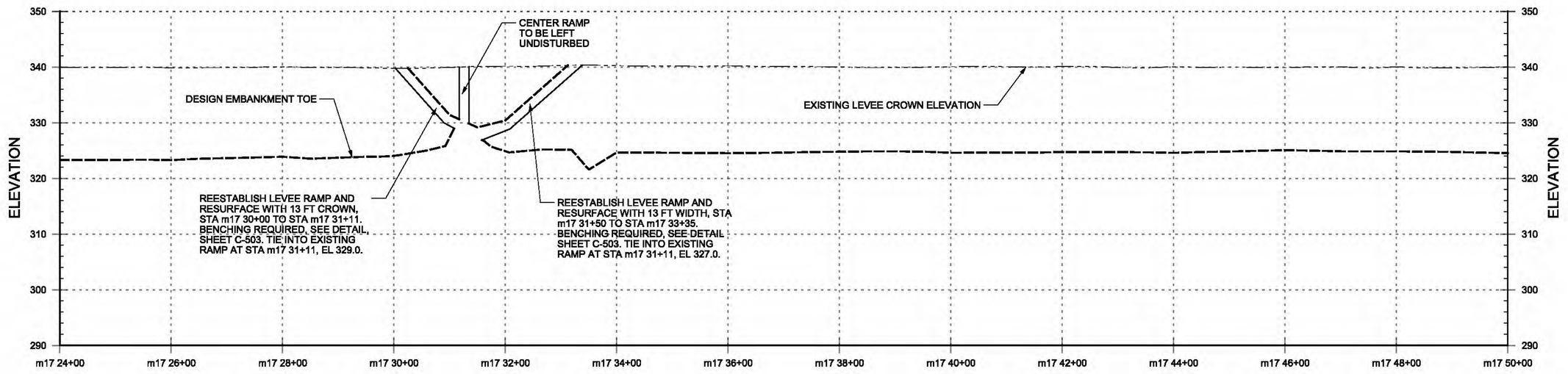

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MEMPHIS, TENNESSEE

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CKD BY: DSC
SUBMITTED BY: THOMAS L MINYARD, P.E.
PLOT SCALE: 1:1
PLOT DATE: 8/28/2014
FILE NAME: C107
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MVK-ROCOCK

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
PLAN AND PROFILE
STA M17 24+00 TO STA M17 49+00
REACH 3

Sheet ID
C-107

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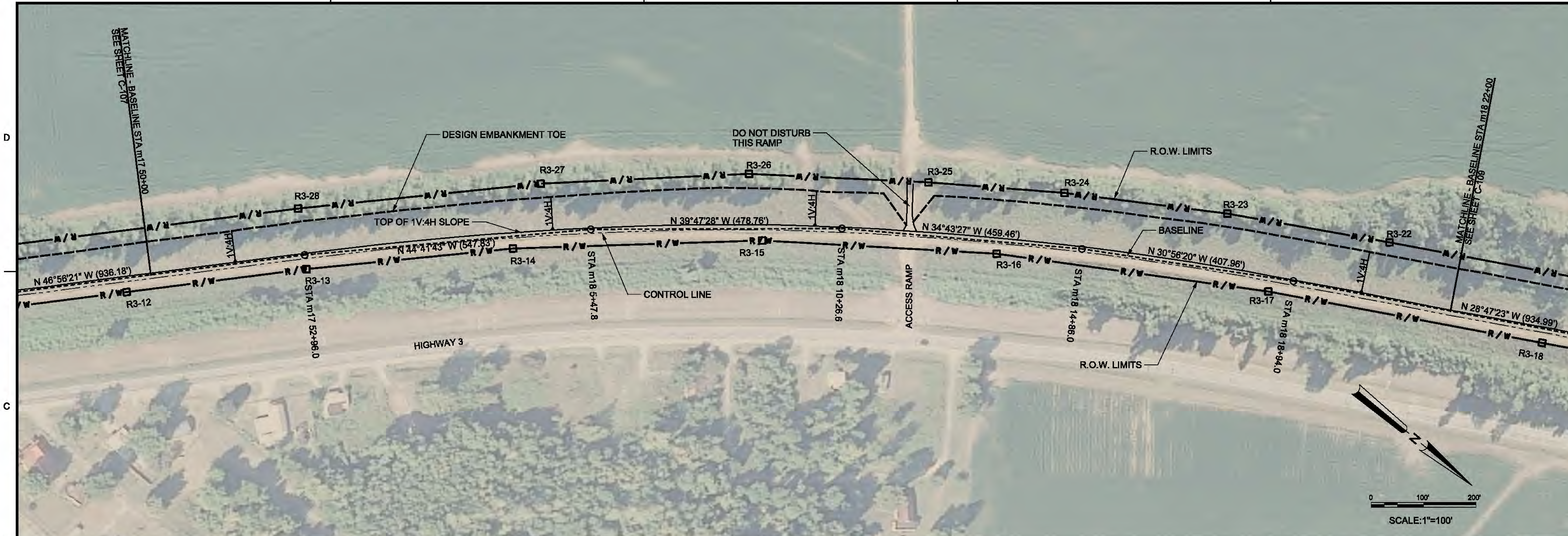

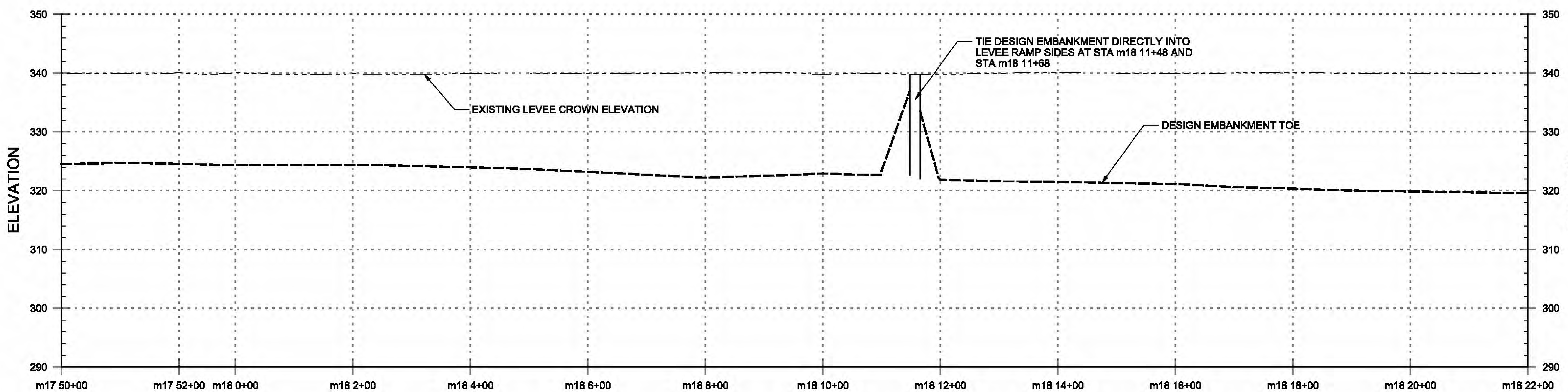

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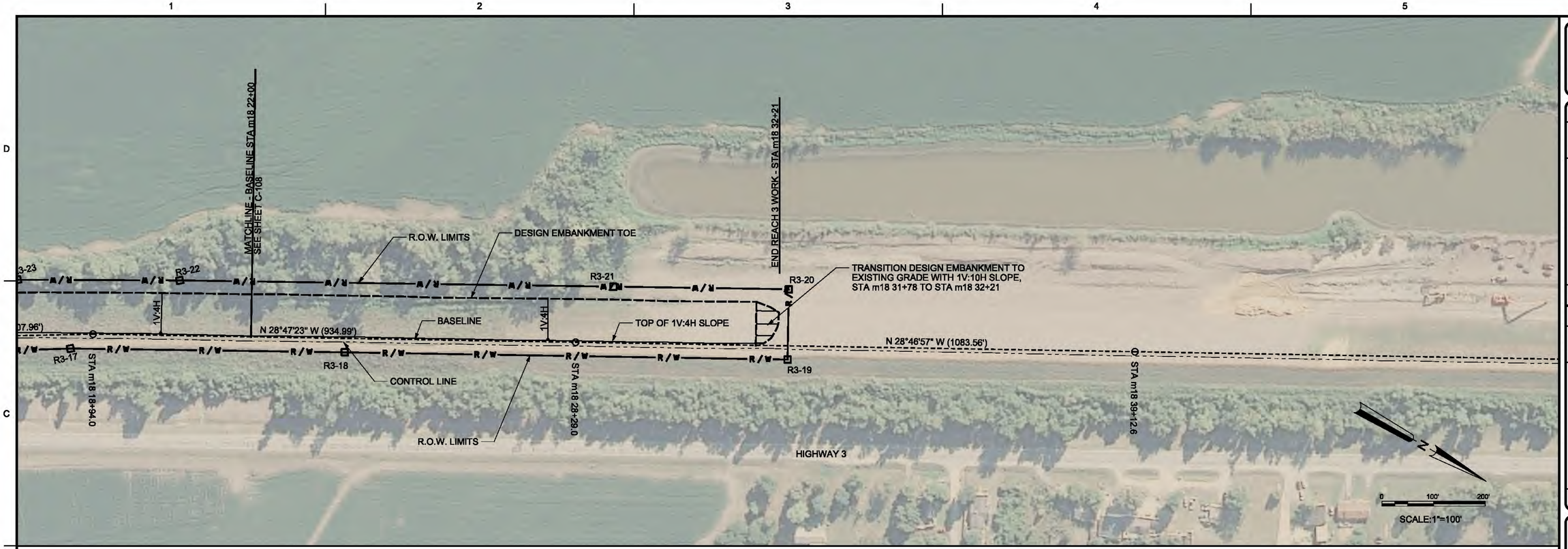
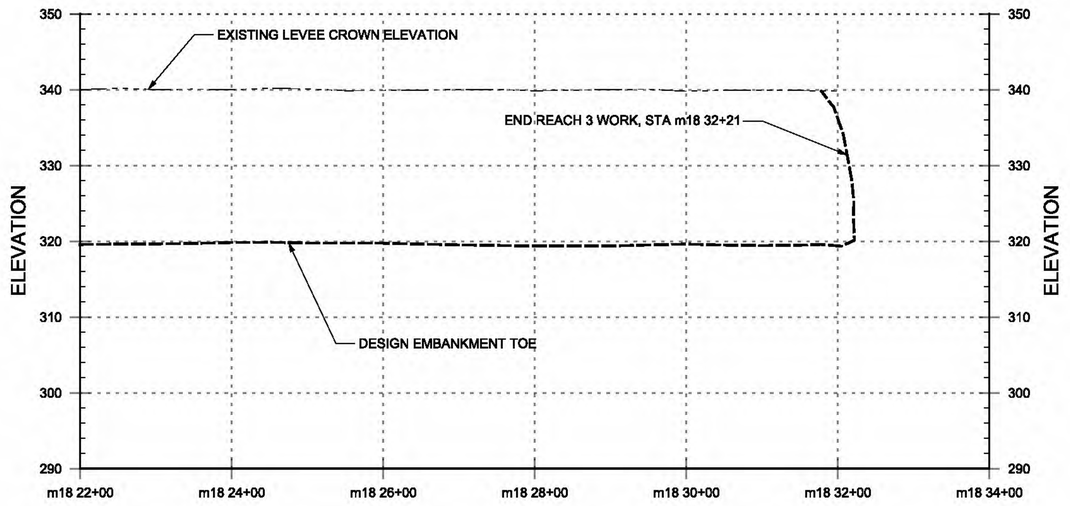
DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 99.9998 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C108
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
PLAN AND PROFILE
STA M17 49+00 TO STA M18 22+00
REACH 3

Sheet ID
C-108

auto_time





US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

DESIGNED BY: JAIME NABAKOWSKI, P.E.
DRAWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 1:1
PLOT DATE: 10/8/2014
SIZE: ANSI D
FILE NAME: C109
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MVK-ROCOCK

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
PLAN AND PROFILE
STA M18 22+00 TO STA M18 32+00
REACH 3

Sheet ID
C-109

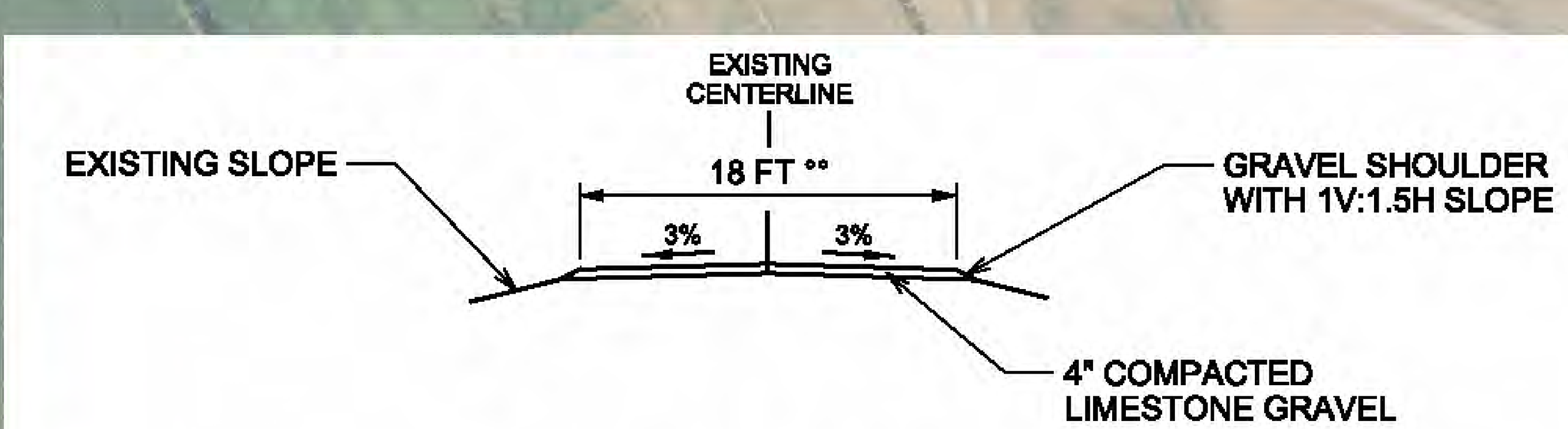
auto_time

NOTES:

1. ACCESS TO THE LEVEE IS AVAILABLE VIA HWY 3 IN THE VICINITY OF KLONDIKE, IL AND 28TH STREET IN CAIRO, IL. THE LOCATIONS OF USABLE RAMPS ARE LISTED IN THE LEVEE ACCESS RAMPS TABLE, THIS SHEET.
2. ACCESS RAMPS LISTED IN TABLE (THIS SHEET) WILL BE RE-SURFACED AS PART OF PROJECT. ACCESS RAMP DIMENSIONS FOR RE-SURFACING, INCLUDING WIDTH AND LENGTH, WILL BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO GRAVEL PLACEMENT ON RAMPS.
3. RIVERSIDE ACCESS RAMPS CALLED OUT ON PLAN AND PROFILE SHEETS TO BE RE-SURFACED WILL BE RE-SURFACED USING DIMENSIONS CALLED OUT ON THOSE SHEETS.
4. LEVEE CROWN DETAIL FOR RE-SURFACING LEVEE CROWN OUTSIDE THE EXTENTS OF REACH 1, REACH 2, AND REACH 3 FOUND ON THIS SHEET. FOR RE-SURFACING OF LEVEE CROWN WITH THE LIMITS OF REACH1, REACH 2, OR REACH 3 SEE SHEET C-302.
5. EXISTING CROWN WILL BE GRADED TO PROVIDE SMOOTH SURFACE FOR PLACING RE-SURFACING MATERIAL.

LEVEE ACCESS RAMPS	
STATIONING	
M12	45+48
M15	49+00
M17	31+37
M18	11+00
M19	3+12

RESURFACING LIMITS			
BEGIN GRAVEL		END GRAVEL	
STATION	M12 46+00	STATION	M19 3+57
NORTHING	13444502.56	NORTHING	13470571.08
EASTING	1000256.76	EASTING	985421.32



CROWN DETAIL 1

N.T.S.

°° POTTS ROAD TO BE RE-SURFACED WITH 11 FT WIDTH

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

DESIGNED BY: JAMIE NABAKOWSKI, P.E.		DATE: AUGUST 2014
DWN BY: JDN	CKD BY: DSC	SOLICITATION NO.: W912EQ-14-R-0006
SUBMITTED BY: THOMAS L. MINYARD, P.E.		CONTRACT NO.:
PLOT SCALE: 999.9990 ft / in.	PLOT DATE: 3/28/2014	FILE NUMBER: MR-P-XX/XXX
SIZE: ANSI D	FILE NAME: C110	

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
LEVEE CROWN RESURFACING AND BORROW HAUL ROUTES

Sheet ID
C-110

auto_time

BASELINE TABLE		
Station	Northing	Easting
m12 51+17.8	13445011.22	1000186.38
m13 3+19.1	13445327.63	1000144.39
m13 10+70.3	13445768.73	1000752.41
m13 20+71.7	13446768.72	1000804.67
m13 31+73.7	13447869.58	1000855.44
m13 40+57.7	13448752.89	1000889.17
m13 47+13.4	13449408.13	1000915.95
m13 49+75.2	13449630.83	1000778.40
m14 0+00.0	13449942.71	1000832.39
m14 3+70.0	13450306.52	1000899.66
m14 5+93.3	13450526.36	1000860.73
m14 6+77.2	13450558.36	1000938.38
m14 11+73.3	13451049.72	1001006.55
m14 15+13.0	13451388.21	1001034.60
m14 17+55.5	13451630.68	1001029.34
m14 21+60.8	13452033.85	1000987.74
m14 24+63.7	13452331.08	1000929.16
m14 27+61.5	13452617.26	1000846.81
m15 44+91.5	13457295.79	995923.43
m15 52+96.9	13457789.36	995287.07
m16 5+61.1	13458144.96	994853.00
m16 9+49.0	13458425.46	994585.04
m16 12+95.8	13458703.79	994378.14
m16 21+11.9	13459373.17	993911.41
m16 31+29.3	13460209.90	993332.66
m17 0+00.0	13462001.36	992093.13
m17 7+67.1	13462627.84	991650.57
m17 11+61.5	13462933.70	991401.47
m17 15+83.7	13463237.87	991108.68
m17 26+02.0	13463933.60	990365.14
m17 35+35.1	13464574.36	989686.77
m17 43+59.8	13465138.28	989085.04
m17 52+96.0	13465777.48	988401.04
m18 5+47.8	13466166.91	988015.73
m18 10+26.6	13466534.78	987709.33
m18 14+86.0	13466912.41	987447.61
m18 18+94.0	13467262.32	987237.87
m18 28+29.0	13468081.74	986787.58
m18 39+12.6	13469031.43	986265.86

Station Equations			
m13 52+92	=	m14 0+00	
m14 51+38	=	m15 0+00	
m15 52+97	=	m16 0+00	
m16 53+08	=	m17 0+00	
m17 52+96	=	m18 0+00	

REACH 1

Station	Offset: Baseline to Control Line	
	Distance (FT)	Towards
m13 2+30.6	14.1	Landside
m13 3+19.1	38.6	Landside
m13 3+85.2	12.6	Landside
m13 3+98.1	10.9	Landside
m13 4+98.0	9.0	Landside
m13 5+97.9	11.5	Landside
m13 6+97.8	14.9	Landside
m13 7+97.7	18.6	Landside
m13 8+97.7	22.1	Landside
m13 9+97.3	17.6	Landside
m13 10+55.3	0.0	*
m13 10+70.3	-7.4	Riverside
m13 10+94.6	0.0	*
m13 10+97.2	0.8	Landside
m13 11+96.1	12.4	Landside
m13 12+96.1	13.0	Landside
m13 13+96.1	12.3	Landside
m13 14+96.1	11.5	Landside
m13 15+96.1	10.6	Landside
m13 16+96.1	9.0	Landside
m13 17+96.1	8.0	Landside
m13 18+96.1	7.0	Landside
m13 19+96.0	6.2	Landside
m13 20+96.0	5.2	Landside
m13 21+96.0	4.3	Landside
m13 22+96.0	5.2	Landside
m13 23+96.0	5.4	Landside
m13 24+96.0	5.9	Landside
m13 25+96.0	5.5	Landside
m13 26+96.0	5.7	Landside
m13 27+96.0	5.4	Landside
m13 28+95.9	5.5	Landside
m13 29+95.9	5.2	Landside
m13 30+95.9	4.9	Landside
m13 31+95.9	5.2	Landside
m13 32+95.9	4.7	Landside
m13 33+95.9	5.3	Landside
m13 34+95.9	5.3	Landside
m13 35+95.9	6.0	Landside
m13 36+95.9	6.8	Landside
m13 37+95.8	5.8	Landside
m13 38+95.6	6.1	Landside
m13 39+95.6	5.9	Landside
m13 40+95.6	6.0	Landside
m13 41+95.6	5.6	Landside
m13 42+95.4	6.8	Landside
m13 43+95.4	9.1	Landside
m13 44+95.4	11.9	Landside
m13 45+95.3	15.9	Landside
m13 46+93.4	1.8	Landside
m13 47+00.0	0.0	*
m13 47+13.4	-4.1	Riverside
m13 47+38.2	0.0	*
m13 47+94.5	0.1	Landside
m13 47+96.3	0.0	*
m13 48+94.4	-2.8	Riverside
m13 49+71.5	0.0	*
m13 49+89.6	1.8	Landside
m13 50+89.6	3.5	Landside
m13 51+89.6	4.3	Landside
m13 52+89.5	4.1	Landside
m14 0+97.9	2.9	Landside
m14 1+97.8	1.1	Landside
m14 3+00.1	0.0	*
m14 3+70.0	-4.2	Riverside
m14 3+99.0	-3.2	Riverside
m14 4+95.7	0.0	*
m14 4+98.5	0.4	Landside
m14 5+93.3	46.7	Landside
m14 6+40.1	20.8	Landside
m14 6+63.6	0.0	*
m14 6+77.2	-9.1	Riverside
m14 7+04.8	0.0	*
m14 7+37.1	-1.3	Riverside
m14 8+37.1	-2.8	Riverside
m14 8+86.0	0.0	*
m14 9+36.5	6.5	Landside
m14 10+36.4	6.1	Landside
m14 11+36.4	5.5	Landside
m14 12+36.0	7.9	Landside
m14 13+36.0	9.3	Landside
m14 14+36.0	7.7	Landside
m14 15+35.4	6.3	Landside
m14 16+35.3	8.0	Landside
m14 17+35.3	5.1	Landside
m14 18+34.8	7.7	Landside
m14 19+34.8	8.9	Landside
m14 20+34.8	9.2	Landside
m14 21+34.8	7.6	Landside
m14 22+34.1	8.4	Landside
m14 23+34.1	8.5	Landside
m14 24+34.1	6.5	Landside
m14 25+33.5	9.0	Landside

* CONTROL LINE TOUCHES BASELINE

REACH 2

Station	Offset: Baseline to Control Line	
	Distance (FT)	Towards
m15 39+61.2	7.4	Landside
m15 40+89.6	8.0	Landside
m15 41+89.6	8.2	Landside
m15 42+89.6	7.4	Landside
m15 43+89.6	7.2	Landside
m15 44+89.6	6.5	Landside
m15 45+89.6	6.6	Landside
m15 46+89.6	7.3	Landside
m15 47+89.6	6.4	Landside
m15 48+89.5	4.6	Landside
m15 49+89.5	6.0	Landside
m15 50+89.5	7.3	Landside
m15 51+89.5	7.8	Landside
m15 52+89.5	8.5	Landside
m16 0+92.8	6.0	Landside
m16 1+92.8	4.0	Landside
m16 2+92.7	2.6	Landside
m16 3+92.7	1.7	Landside
m16 4+92.7	3.9	Landside
m16 5+61.1	6.8	Landside
m16 5+93.4	4.6	Landside
m16 6+93.3	0.5	Landside
m16 7+28.4	0.0	*
m16 7+93.3	-0.3	Riverside
m16 8+93.2	3.4	Landside
m16 9+49.0	7.1	Landside
m16 9+93.9	5.0	Landside
m16 10+93.9	2.5	Landside
m16 11+93.6	4.9	Landside
m16 12+93.6	7.2	Landside
m16 13+93.8	5.9	Landside
m16 14+93.8	6.2	Landside
m16 15+93.8	5.3	Landside
m16 16+93.7	5.1	Landside
m16 17+93.7	4.9	Landside
m16 18+93.7	5.9	Landside
m16 19+93.7	6.1	Landside
m16 20+93.7	6.8	Landside
m16 21+93.8	6.4	Landside
m16 22+93.7	7.4	Landside
m16 23+93.7	7.2	Landside
m16 24+93.7	7.0	Landside
m16 25+93.7	7.2	Landside
m16 26+93.7	7.0	Landside
m16 27+93.7	6.9	Landside
m16 28+93.7	6.7	Landside
m16 29+93.7	5.8	Landside
m16 30+93.7	7.1	Landside
m16 31+93.7	6.8	Landside
m16 32+93.7	7.0	Landside
m16 33+93.7	6.8	Landside
m16 34+93.7	6.9	Landside
m16 35+93.7	6.5	Landside
m16 36+93.7	6.4	Landside
m16 37+93.7	6.3	Landside
m16 38+93.7	6.8	Landside
m16 39+93.7	6.6	Landside
m16 40+93.7	7.0	Landside

* CONTROL LINE TOUCHES BASELINE

REACH 3

Station	Offset: Baseline to Control Line	
	Distance (FT)	Towards
m16 52+72	6.8	Landside
m17 0+85.3	8.8	Landside
m17 1+85.3	8.8	Landside
m17 2+85.2	11.0	Landside
m17 3+85.1	11.4	Landside
m17 4+85.1	9.9	Landside
m17 5+85.1	9.6	Landside
m17 6+85.1	7.2	Landside
m17 7+84.7	5.7	Landside
m17 8+84.6	7.5	Landside
m17 9+84.6	9.3	Landside
m17 10+84.5	8.5	Landside
m17 11+84.0	6.4	Landside
m17 12+83.9	8.3	Landside
m17 13+83.9	9.7	Landside
m17 14+83.9	8.5	Landside
m17 16+83.4	6.8	Landside
m17 17+83.4	7.2	Landside
m17 18+83.4	7.4	Landside
m17 19+83.4	7.2	Landside
m17 20+83.4	6.9	Landside
m17 21+83.4	6.5	Landside
m17 22+83.4	6.1	Landside
m17 23+83.4	6.2	Landside
m17 24+83.4	6.2	Landside
m17 25+83.4	7.0	Landside
m17 26+83.2	5.7	Landside
m17 27+83.2	5.5	Landside
m17 28+83.2	5.5	Landside
m17 29+83.2	5.2	Landside
m17 30+83.2	5.3	Landside
m17 31+83.2	5.4	Landside
m17 32+83.2	5.3	Landside
m17 33+83.2	5.6	Landside
m17 34+83.2	5.9	Landside
m17 35+83.2	6.9	Landside
m17 36+83.1	6.3	Landside
m17 37+83.1	6.4	Landside
m17 38+83.1	6.4	Landside
m17 39+83.1	6.4	Landside
m17 40+83.1	6.1	Landside
m17 41+83.1	6.1	Landside
m17 42+83.1	6.5	Landside
m17 43+83.1	6.9	Landside
m17 44+83.1	6.7	Landside
m17 45+83.1	7.0	Landside
m17 46+83.1	6.8	Landside
m17 47+83.1	7.1	Landside
m17 48+83.1	6.8	Landside
m17 49+83.1	7.0	Landside
m17 50+83.1	6.9	Landside
m17 51+83.1	7.3	Landside
m17 52+83.1	7.1	Landside
m18 0+87.3	4.6	Landside

REACH 3

Station	Offset: Baseline to Control line	
	Distance (FT)	Towards
m18 2+87.3	1.9	Landside
m18 3+87.3	2.8	Landside
m18 4+87.2	5.2	Landside
m18 5+87.8	6.0	Landside
m18 6+87.7	3.0	Landside
m18 7+87.7	1.6	Landside
m18 8+87.7	2.5	Landside
m18 9+87.6	5.9	Landside
m18 10+88.2	4.9	Landside
m18 11+88.2	3.4	Landside
m18 12+88.2	2.7	Landside
m18 13+88.2	3.5	Landside
m18 14+88.6	5.9	Landside
m18 15+88.5	3.7	Landside
m18 16+88.5	3.4	Landside
m18 17+88.5	4.8	Landside
m18 18+88.4	8.0	Landside
m18 19+88.7	7.3	Landside
m18 20+88.7	7.7	Landside
m18 21+88.7	8.5	Landside
m18 22+88.7	7.6	Landside
m18 23+88.7	6.8	Landside
m18 24+88.7	7.3	Landside
m18 25+88.7	7.4	Landside
m18 26+88.7	7.9	Landside
m18 27+88.7	7.5	Landside
m18 28+88.7	7.5	Landside
m18 29+88.7	7.1	Landside
m18 30+88.6	7.5	Landside
m18 31+88.6	5.5	Landside
m18 32+88.6	7.0	Landside

Reach 1 Right Of Way Points		
Point Number	Northing	Easting
R1-1	13445460.51	1000044.84
R1-2	13445302.88	1000167.80
R1-3	13445762.63	1000785.22
R1-4	13446232.80	1000807.80
R1-5	13447911.11	1000882.05
R1-6	13448889.98	1000920.40
R1-7	13449320.40	1000949.64
R1-8	13449480.03	1000938.59
R1-9	13449729.63	1000910.49
R1-10	13450368.82	1000988.00
R1-11	13450558.29	1001041.11
R1-12	13450709.07	1000986.73
R1-13	13451089.06	1001036.85
R1-14	13451491.34	1001074.34
R1-15	13452180.18	1000988.28
R1-16	13452450.87	1000927.00
R1-17	13452418.76	1000763.54
R1-18	13452143.67	1000816.24
R1-19	13452014.34	1000821.13
R1-20	13451723.45	1000857.86
R1-21	13451439.85	1000857.03
R1-22	13450962.59	1000826.64
R1-23	13450689.96	1000865.67
R1-24	13450639.48	1000855.98
R1-25	13450427.95	1000735.82
R1-26	13450238.56	1000739.63
R1-27	13449667.24	1000645.79
R1-28	13449405.79	1000774.18
R1-29	13449103.38	1000746.60
R1-30	13448901.68	1000732.23
R1-31	13445837.35	1000597.16

Reach 2 Right Of Way Points		
Point Number	Northing	Easting
R2-1	13456990.71	996359.58
R2-2	13457565.59	995620.89
R2-3	13457803.56	995315.16
R2-4	13458481.87	994573.96
R2-5	13459275.81	994011.21
R2-6	13460276.26	993319.52
R2-7	13460974.60	992837.10
R2-8	13460866.08	992680.02
R2-9	13460593.98	992866.98
R2-10	13460290.86	993078.84
R2-11	13460276.23	993145.84
R2-12	13458545.97	994317.01
R2-13	13458495.71	994328.64
R2-14	13458441.13	994349.87
R2-15	13458201.92	994566.04
R2-16	13458054.71	994704.37
R2-17	13458007.46	994758.83
R2-18	13457784.49	995030.73
R2-19	13457380.91	995601.23
R2-20	13457106.56	995975.25
R2-21	13456894.71	996284.71

Reach 3 Right Of Way Points		
Point Number	Northing	Easting
R3-1	13461983.47	992137.28
R3-2	13462493.00	991786.45
R3-3	13462839.36	991516.49
R3-4	13462894.30	991527.96
R3-5	13463025.18	991416.87
R3-6	13462997.01	991378.69
R3-7	13463232.53	991151.02
R3-8	13463490.86	990877.99
R3-9	13464341.64	989970.04
R3-10	13464774.59	989511.44
R3-11	13465253.41	989000.81
R3-12	13465560.86	988672.18
R3-13	13465797.08	988419.94
R3-14	13466075.77	988138.57
R3-15	13466432.38	987823.75
R3-16	13466793.01	987558.36
R3-17	13467238.07	987283.81
R3-18	13467702.23	987026.95
R3-19	13468454.79	986612.97
R3-20	13468389.23	986493.67
R3-21	13468091.66	986657.98
R3-22	13467356.55	987064.26
R3-23	13467083.24	987219.07
R3-24	13466818.67	987386.58
R3-25	13466605.95	987536.31
R3-26	13466331.76	987742.03
R3-27	13466037.58	988009.52
R3-28	13465711.39	988340.96
R3-29	13464125.23	990028.38
R3-30	13463210.06	990990.45
R3-31	13462740.37	991412.57
R3-32	13462546.26	991565.49
R3-33	13462261.49	991768.12
R3-34	13461899.16	992018.49

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX
DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 20.0000 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C111

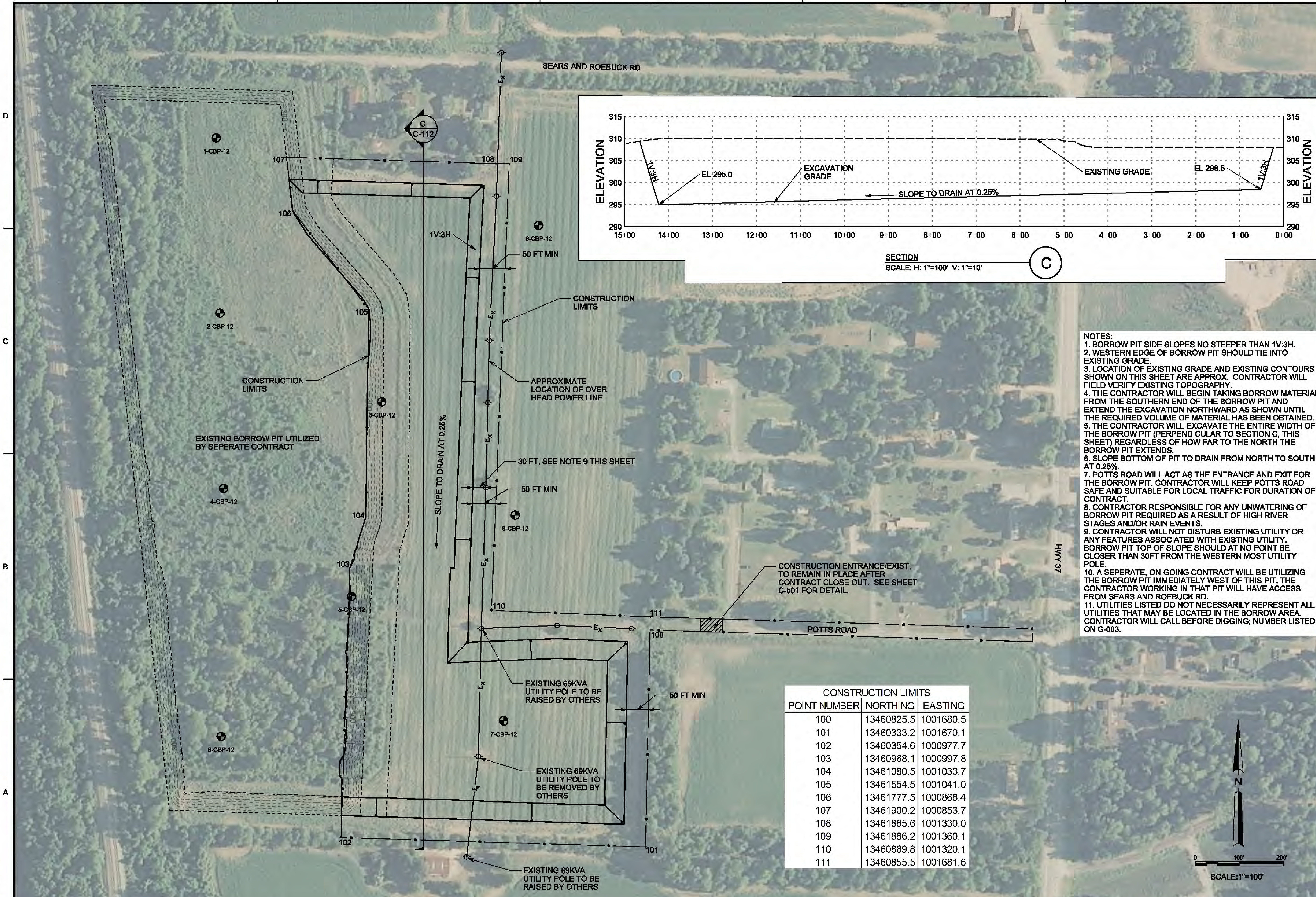
U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

CAIRO SLOPE FLATTENING

MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

TABLES

Sheet ID
C-111



NOTES:
1. BORROW PIT SIDE SLOPES NO STEEPER THAN 1V:3H.
2. WESTERN EDGE OF BORROW PIT SHOULD TIE INTO EXISTING GRADE.
3. LOCATION OF EXISTING GRADE AND EXISTING CONTOURS SHOWN ON THIS SHEET ARE APPROX. CONTRACTOR WILL FIELD VERIFY EXISTING TOPOGRAPHY.
4. THE CONTRACTOR WILL BEGIN TAKING BORROW MATERIAL FROM THE SOUTHERN END OF THE BORROW PIT AND EXTEND THE EXCAVATION NORTHWARD AS SHOWN UNTIL THE REQUIRED VOLUME OF MATERIAL HAS BEEN OBTAINED.
5. THE CONTRACTOR WILL EXCAVATE THE ENTIRE WIDTH OF THE BORROW PIT (PERPENDICULAR TO SECTION C, THIS SHEET) REGARDLESS OF HOW FAR TO THE NORTH THE BORROW PIT EXTENDS.
6. SLOPE BOTTOM OF PIT TO DRAIN FROM NORTH TO SOUTH AT 0.25%.
7. POTTS ROAD WILL ACT AS THE ENTRANCE AND EXIT FOR THE BORROW PIT. CONTRACTOR WILL KEEP POTTS ROAD SAFE AND SUITABLE FOR LOCAL TRAFFIC FOR DURATION OF CONTRACT.
8. CONTRACTOR RESPONSIBLE FOR ANY UNWATERING OF BORROW PIT REQUIRED AS A RESULT OF HIGH RIVER STAGES AND/OR RAIN EVENTS.
9. CONTRACTOR WILL NOT DISTURB EXISTING UTILITY OR ANY FEATURES ASSOCIATED WITH EXISTING UTILITY. BORROW PIT TOP OF SLOPE SHOULD AT NO POINT BE CLOSER THAN 30FT FROM THE WESTERN MOST UTILITY POLE.
10. A SEPERATE, ON-GOING CONTRACT WILL BE UTILIZING THE BORROW PIT IMMEDIATELY WEST OF THIS PIT. THE CONTRACTOR WORKING IN THAT PIT WILL HAVE ACCESS FROM SEARS AND ROEBUCK RD.
11. UTILITIES LISTED DO NOT NECESSARILY REPRESENT ALL UTILITIES THAT MAY BE LOCATED IN THE BORROW AREA. CONTRACTOR WILL CALL BEFORE DIGGING; NUMBER LISTED ON G-003.

CONSTRUCTION LIMITS

POINT NUMBER	NORTHING	EASTING
100	13460825.5	1001680.5
101	13460333.2	1001670.1
102	13460354.6	1000977.7
103	13460968.1	1000997.8
104	13461080.5	1001033.7
105	13461554.5	1001041.0
106	13461777.5	1000868.4
107	13461900.2	1000853.7
108	13461885.6	1001330.0
109	13461886.2	1001360.1
110	13460869.8	1001320.1
111	13460855.5	1001681.6

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

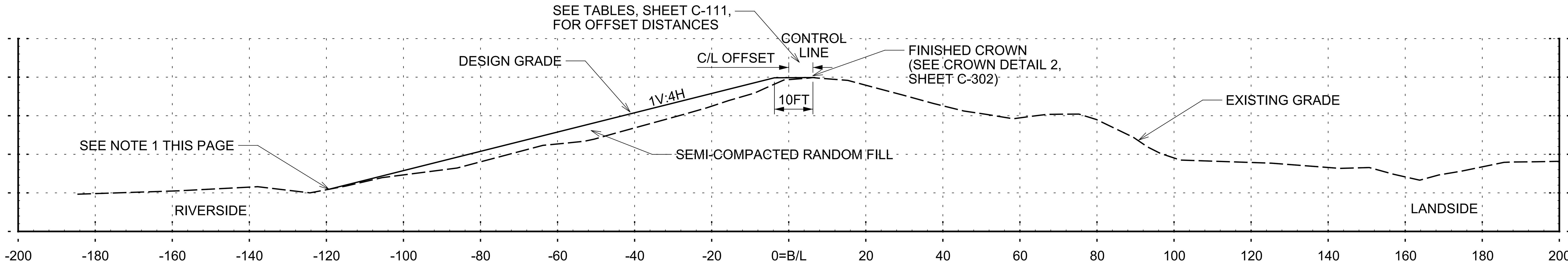
DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 99.9998 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C112
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0006
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
BORROW PIT
PLAN AND PROFILE

Sheet ID
C-112

auto_time

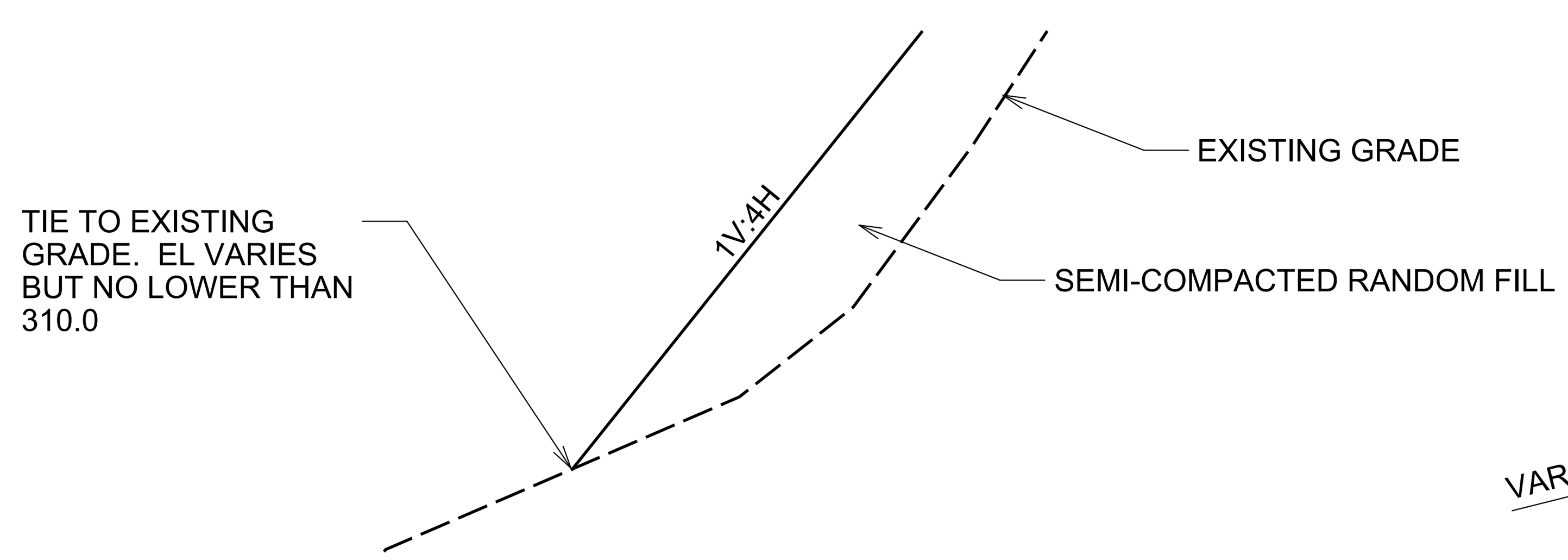
NOTES:
1. EMBANKMENT TOE PLACEMENT METHOD AND ELEVATIONS VARY DEPENDING UPON EXISTING TOPOGRAPHY. SEE DESIGN EMBANKMENT TOE TREATMENT DETAILS THIS SHEET.
2. TYPICAL SECTION AND DESIGN EMBANKMENT TOE TREATMENTS ARE APPLICABLE TO ALL SLOPE FLATTENING AREAS UNLESS OTHERWISE DIRECTED ON PLAN AND PROFILE SHEETS.
3. UPPER TOP 4 IN OF EXISTING SOIL WILL BE STRIPPED PRIOR TO PLACEMENT OF EMBANKMENT. SEE SPECS FOR FURTHER INSTRUCTION.



TYPICAL SECTION

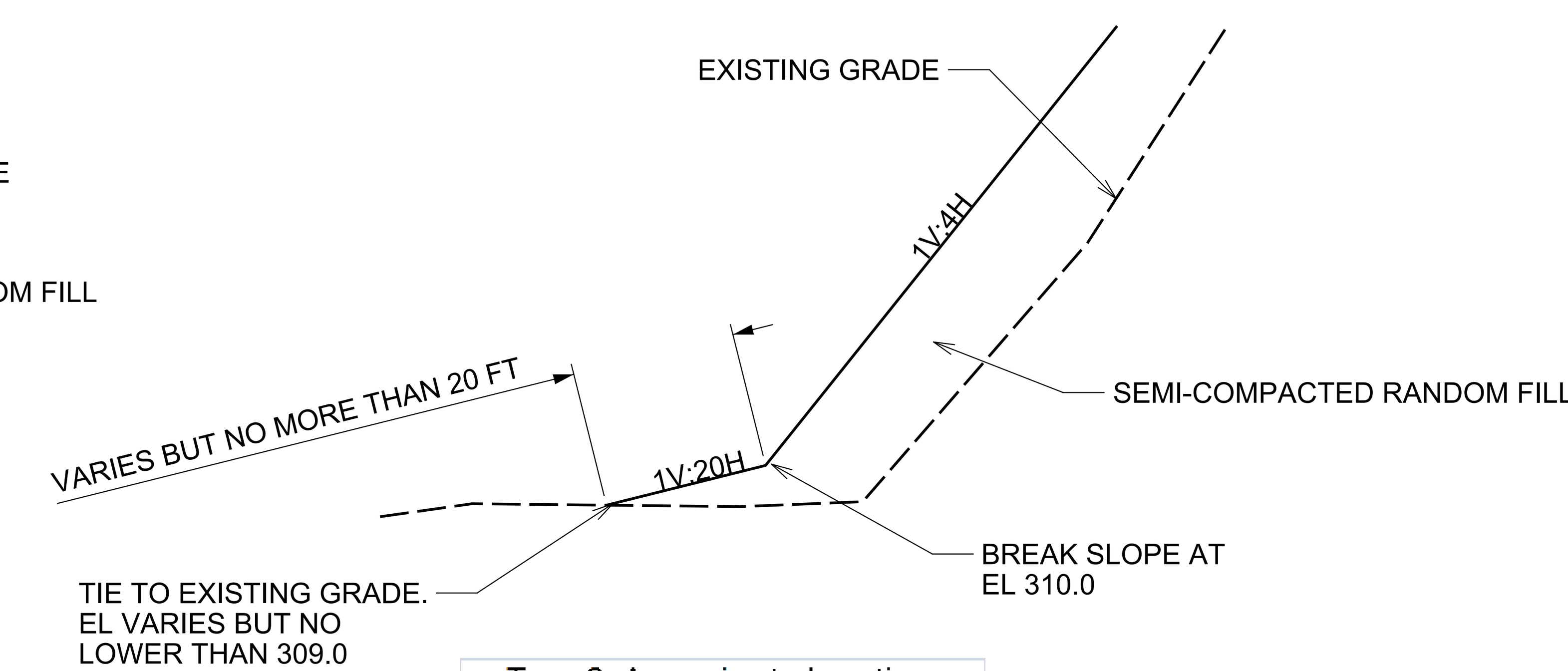
SCALE: 1IN=20FT

TYPE1: EMBANKMENT SLOPE INTERSECTS EXISTING AT OR ABOVE EL 310.0.



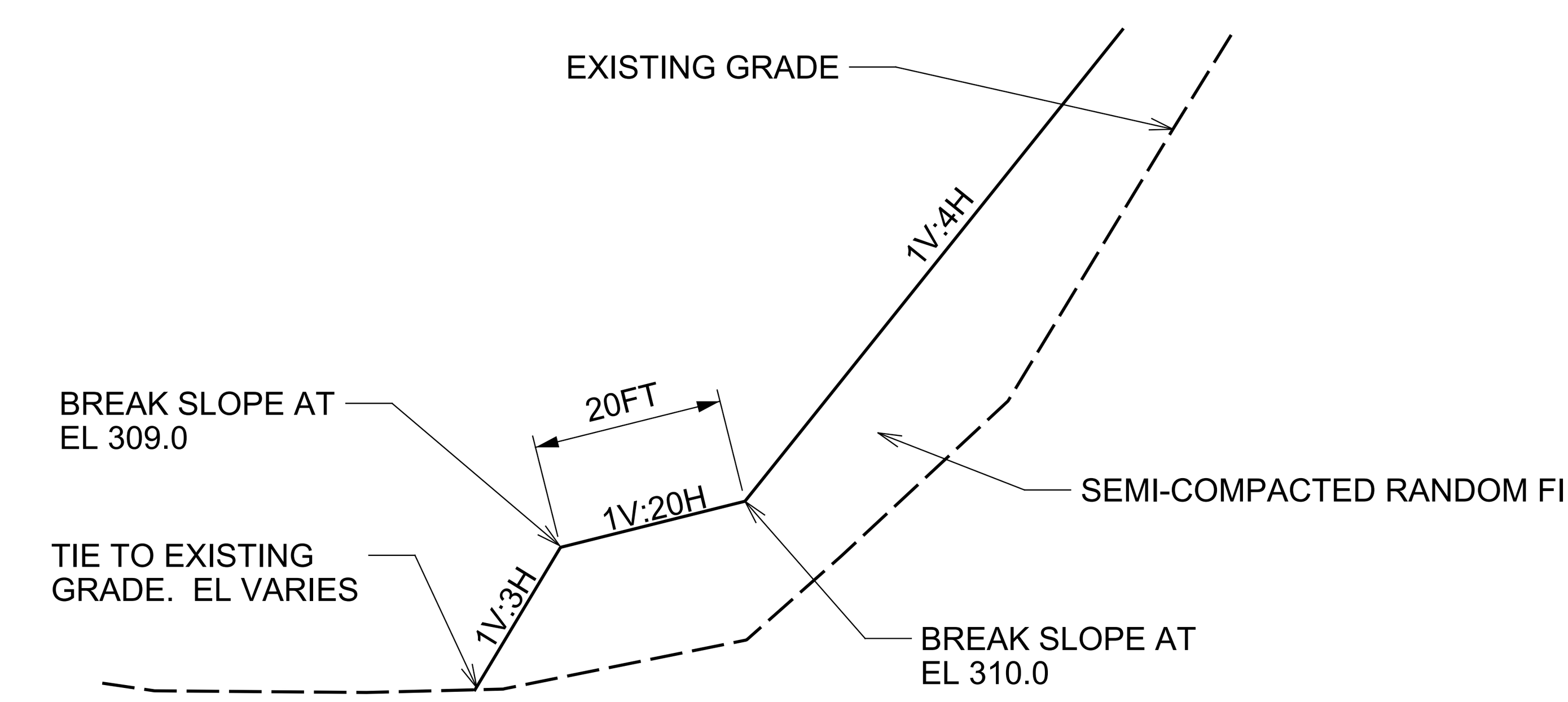
Type 1: Approximate Locations			
Start		Stop	
m13	22+00	m13	23+45
m13	24+00	m13	24+60
m13	35+36	m13	36+80
m13	44+66	m14	10+92
m15	39+66	m16	0+85
m16	4+31	m16	4+56
m16	11+84	m16	33+44
m16	37+07	m16	38+94
m17	0+00	m18	32+00

TYPE 2: BREAK EMBANKMENT SLOPE AT EL 310.0. FINISH WITH PLANTING BERM SLOPED AT 1V:20H TO EXISTING IN 20 FT OR LESS.



Type 2: Approximate Locations			
Start		Stop	
m13	6+00	m13	9+20
m13	23+45	m13	24+00
m13	25+15	m13	25+78
m13	29+40	m13	35+36
m13	36+80	m13	37+52
m13	38+67	m13	41+16
m13	44+08	m13	44+66
m14	22+05	m14	25+06
m16	0+85	m16	4+31
m16	4+56	m16	5+21
m16	6+41	m16	9+18
m16	11+50	m16	11+84
m16	33+44	m16	37+07
m16	38+94	m16	39+90

TYPE 3:BREAK EMBANKMENT SLOPE AT EL 310.0. BREAK PLANTING BERM SLOPE AT EL 309.0. FINISH WITH 1V:3H SLOPED TO EXISTING.



Type 3: Approximate Locations			
Start		Stop	
m13	3+78	m13	6+00
m13	9+20	m13	21+52
m13	24+92	m13	25+15
m13	25+78	m13	29+40
m13	37+52	m13	38+67
m13	41+16	m13	44+08
m14	10+92	m14	22+05
m16	5+21	m16	6+41
m16	9+18	m18	11+50

DESIGN EMBANKMENT TOE TREATMENT DETAILS

N.T.S.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

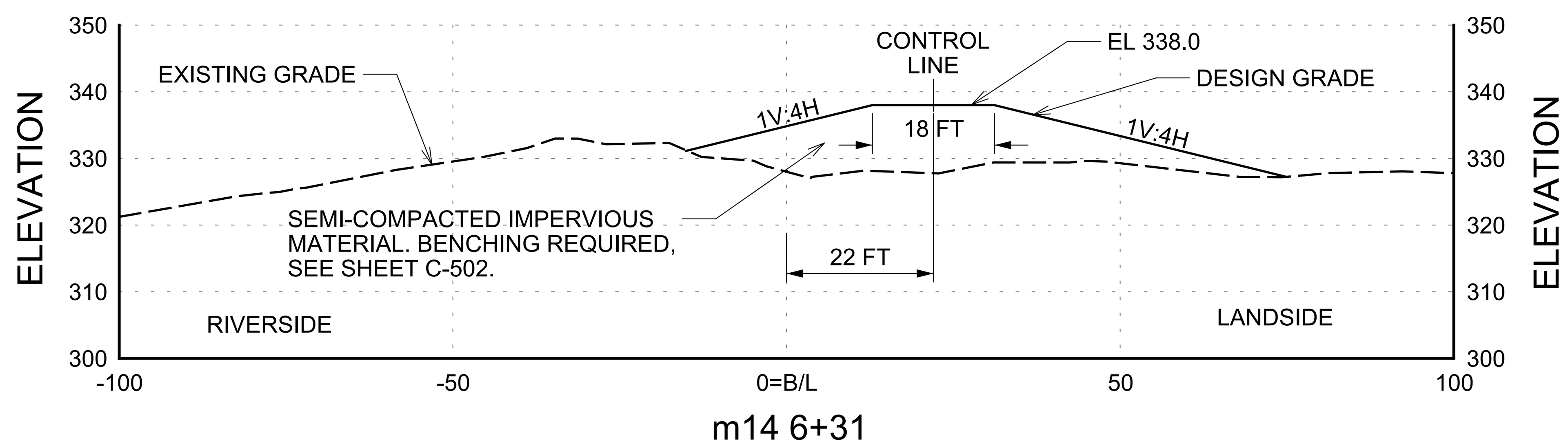
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX
DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 20.0000 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C301

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
TYPICAL SECTION WITH END TREATMENTS

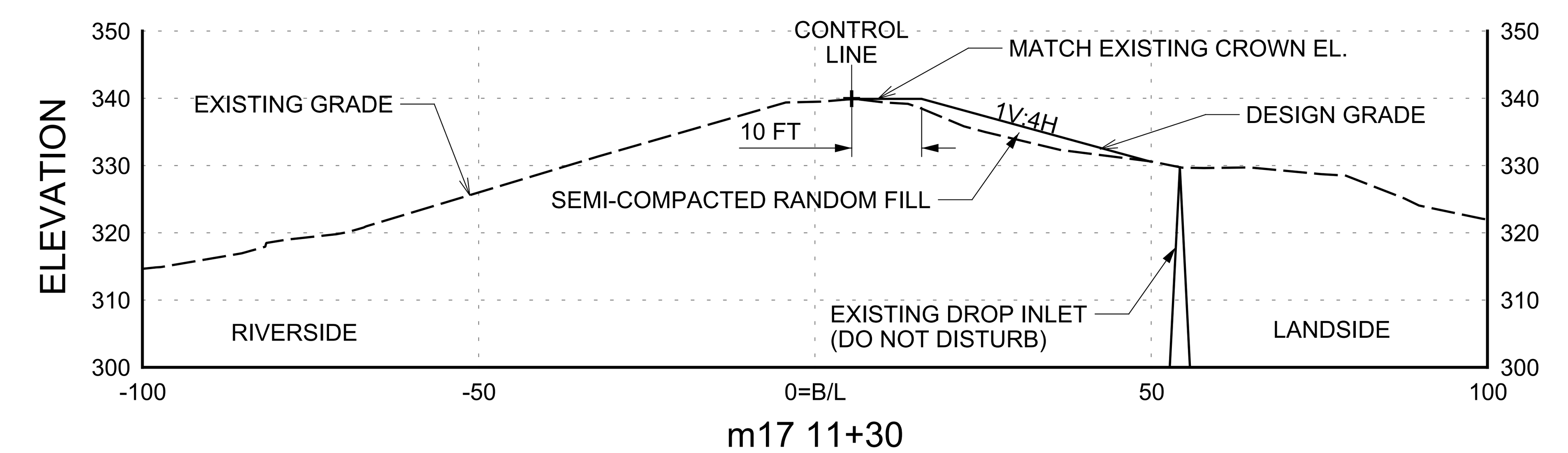
Sheet ID
C-301

NOTES:
1. LEVEE CROWN WITHIN THE EXTENTS OF REACH 1, REACH 2, OR REACH 3 WILL BE RE-SURFACED USING CROWN DETAIL 2, THIS PAGE. FOR DETAILS RELATING TO CROWN RE-SURFACING IN AREAS OUTSIDE THE EXTENTS OF REACH 1, REACH 2, AND REACH 3 SEE SHEET C-110.
2. WITHIN THE EXTENTS OF REACH 1, REACH 2, OR REACH 3: GEOTEXTILE SHALL BE PLACED BETWEEN NEWLY PLACED EMBANKMENT AND NEW GRAVEL SURFACE COURSE IN ANY AREA WHERE NEW GRAVEL IS BEING PLACED ATOP NEWLY PLACED EMBANKMENT. IN NO AREA SHALL GEOTEXTILE PROTRUDE FROM BENEATH THE FINAL, IN PLACE GRAVEL SURFACE COURSE.
3. SECTION A IS APPLICABLE FROM STA m14 5+00 TO STA m14 7+06.
4. SECTION B IS APPLICABLE FROM STA m17 10+33 TO STA m17 12+00.
5. UPPER TOP 4 IN OF EXISTING SOIL WILL BE STRIPPED PRIOR TO PLACEMENT OF EMBANKMENT. SEE SPECS FOR FURTHER INSTRUCTION.

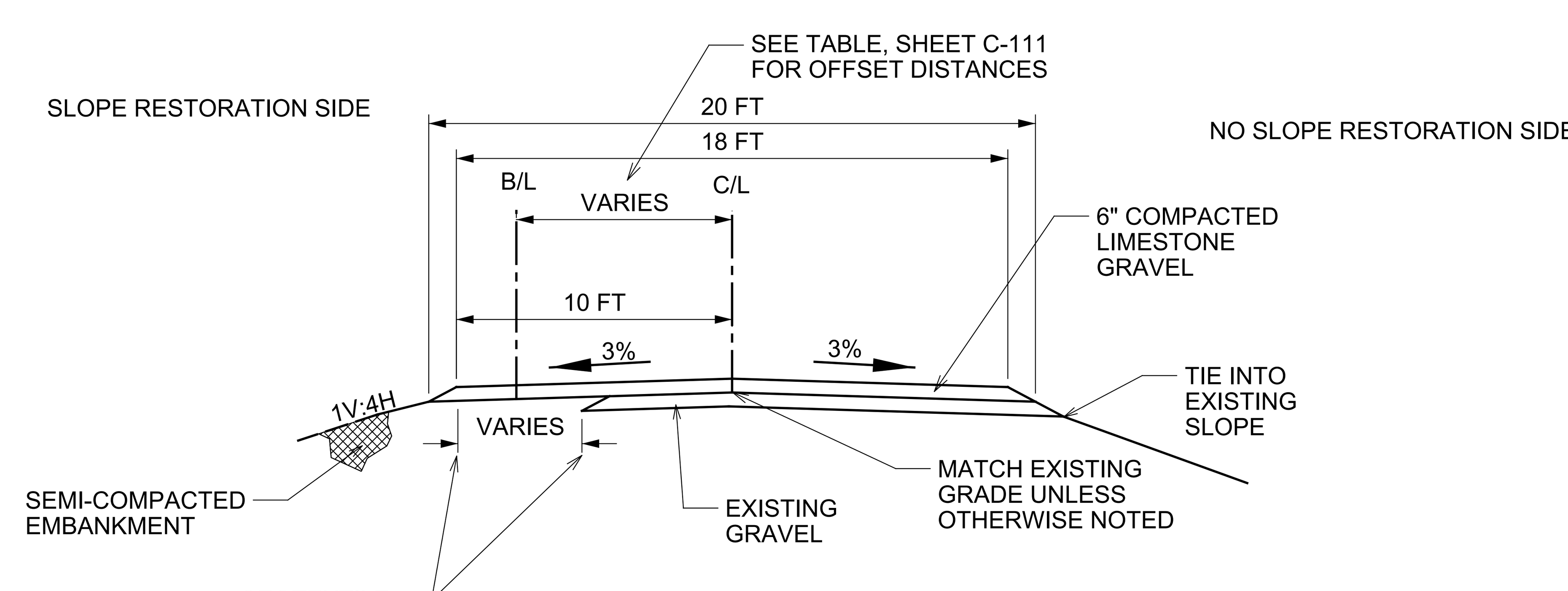


SECTION A* (A / C-103)
SCALE: 1IN=20FT

*SECTION A TAKEN AT B/L STA m16 6+31. VIEW SHOWN IS PERPENDICULAR TO CONTROL LINE



SECTION B (B / C-106)
SCALE: 1IN=20FT



CROWN DETAIL 2
N.T.S.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

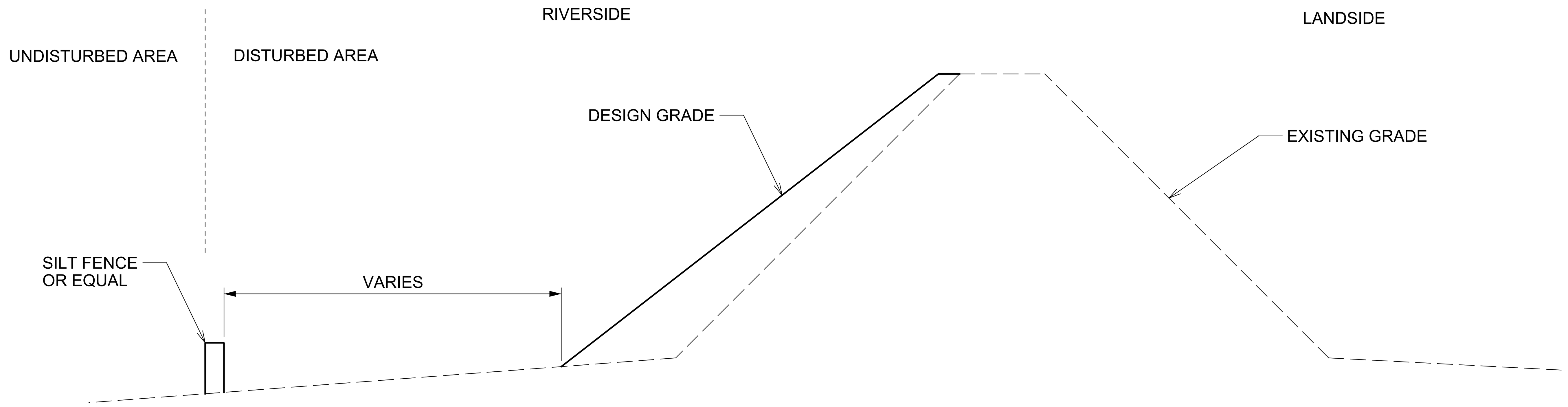
DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 20.0000 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C302
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
CUT SECTIONS AND CROWN DETAIL

Sheet ID
C-302

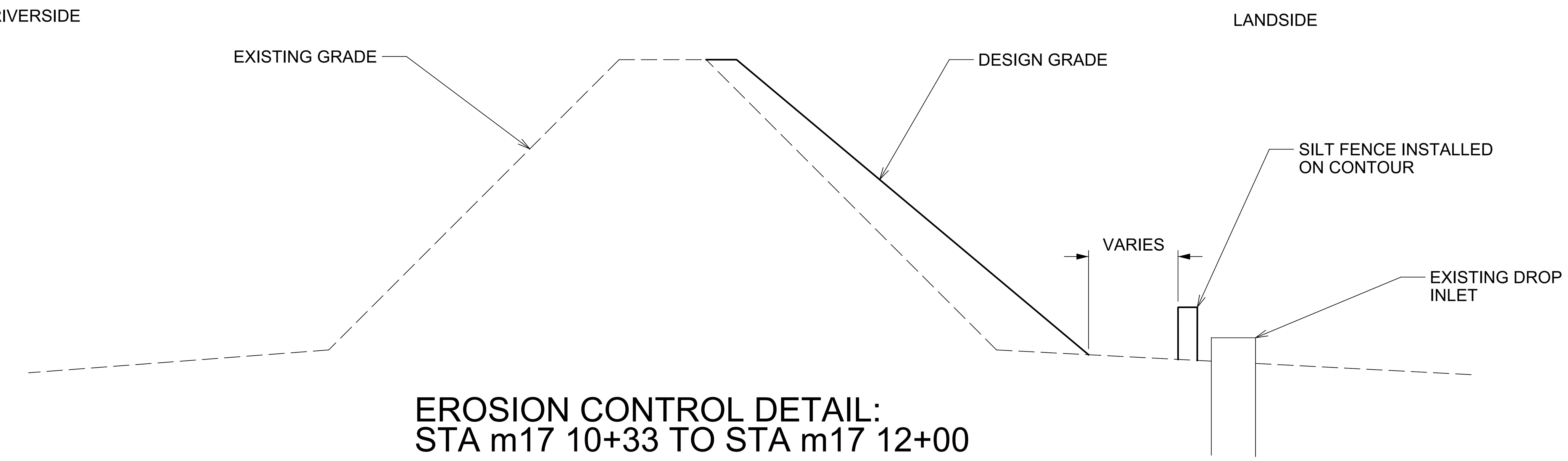
auto_time

NOTES:
1. EROSION PREVENTION AND SEDIMENT CONTROL WILL BE USED ALONG THE FULL EXTENTS OF EACH SLOPE RESTORATION REACH. MEASURES WILL BE IN THE FORM OF SILT FENCE OR EQUIVALENT.
2. DETAILS ON THIS PAGE REPRESENT THE MINIMUM EFFORT REQUIRED.
3. CONSTRUCTION ENTRANCE/EXIT WILL BE INSTALLED AT THE BORROW PIT ENTRANCE/EXIT AS SHOWN ON C-112. SEE DETAIL THIS SHEET.



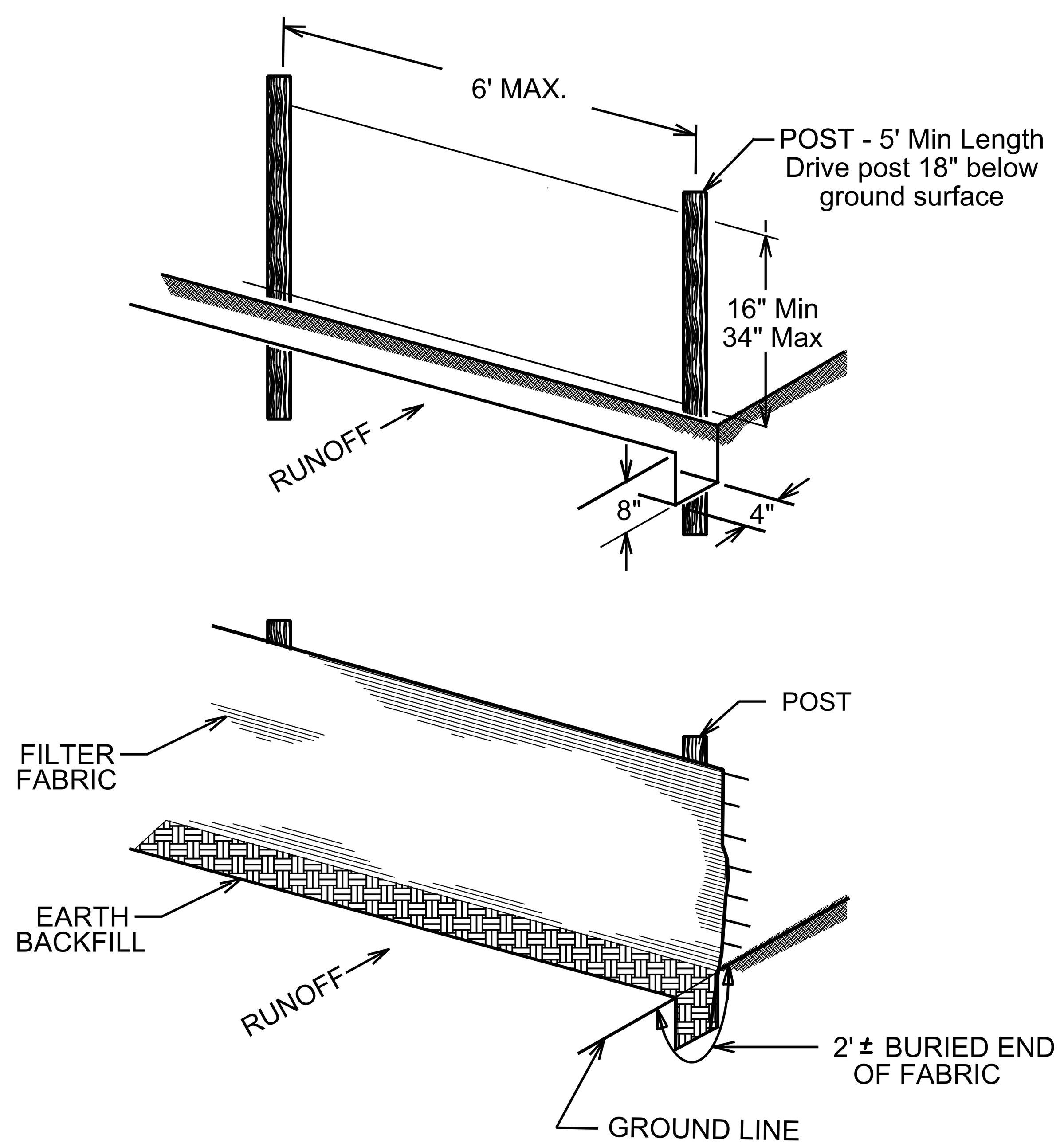
TYPICAL EROSION CONTROL DETAIL 1

N.T.S.



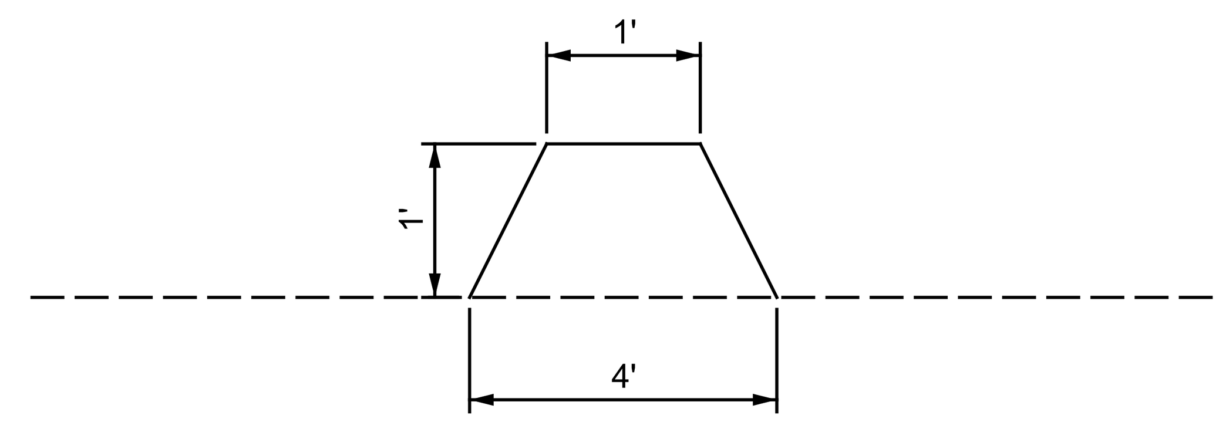
EROSION CONTROL DETAIL: STA m17 10+33 TO STA m17 12+00

N.T.S.



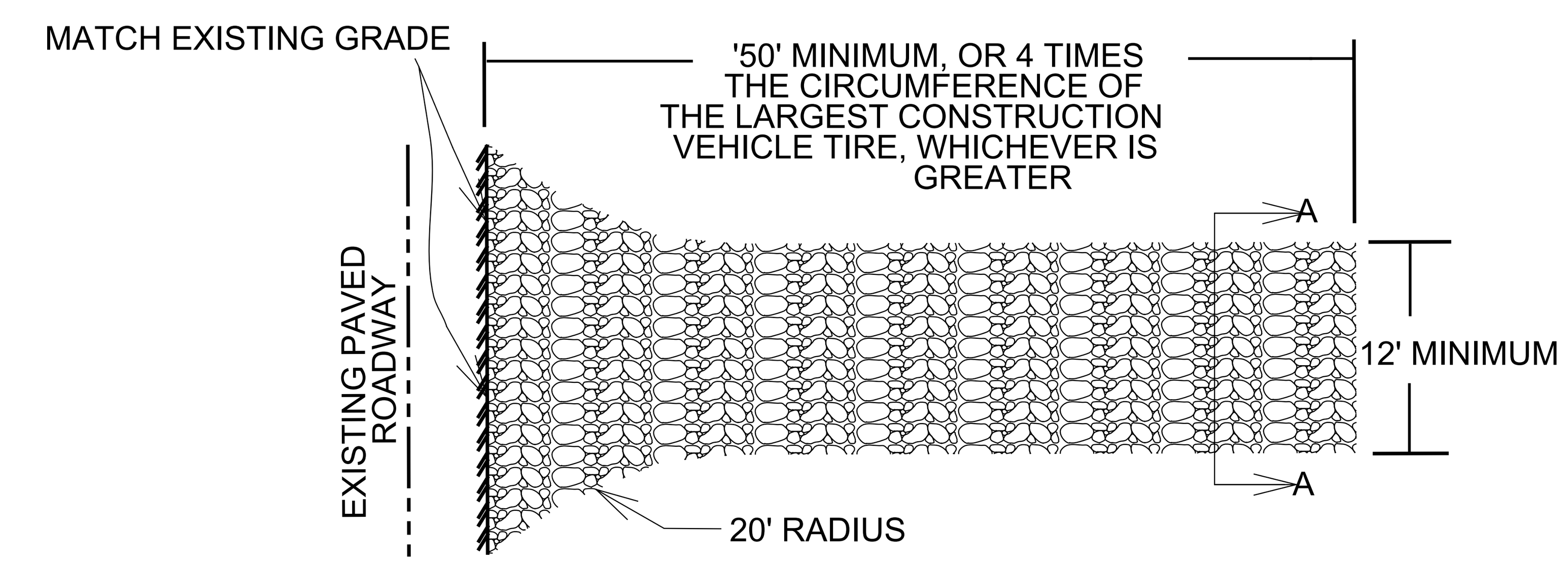
SILT FENCE DETAIL

NOT TO SCALE



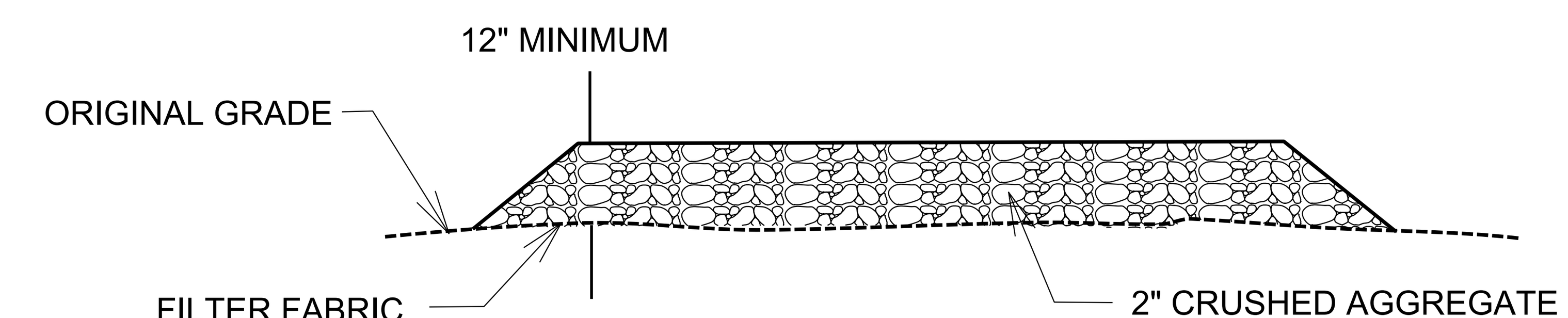
EROSION CONTROL BERM

NOT TO SCALE



PLAN

NOT TO SCALE



SECTION A-A

NOT TO SCALE

CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT TO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

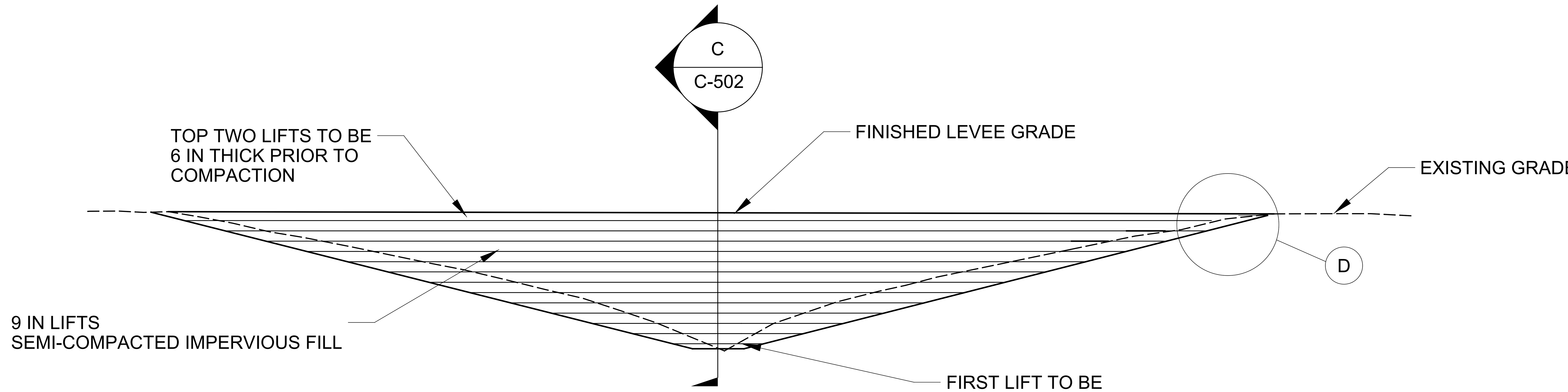
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 20.0000 ' / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C501
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
EROSION CONTROL DETAILS

Sheet ID
C-501



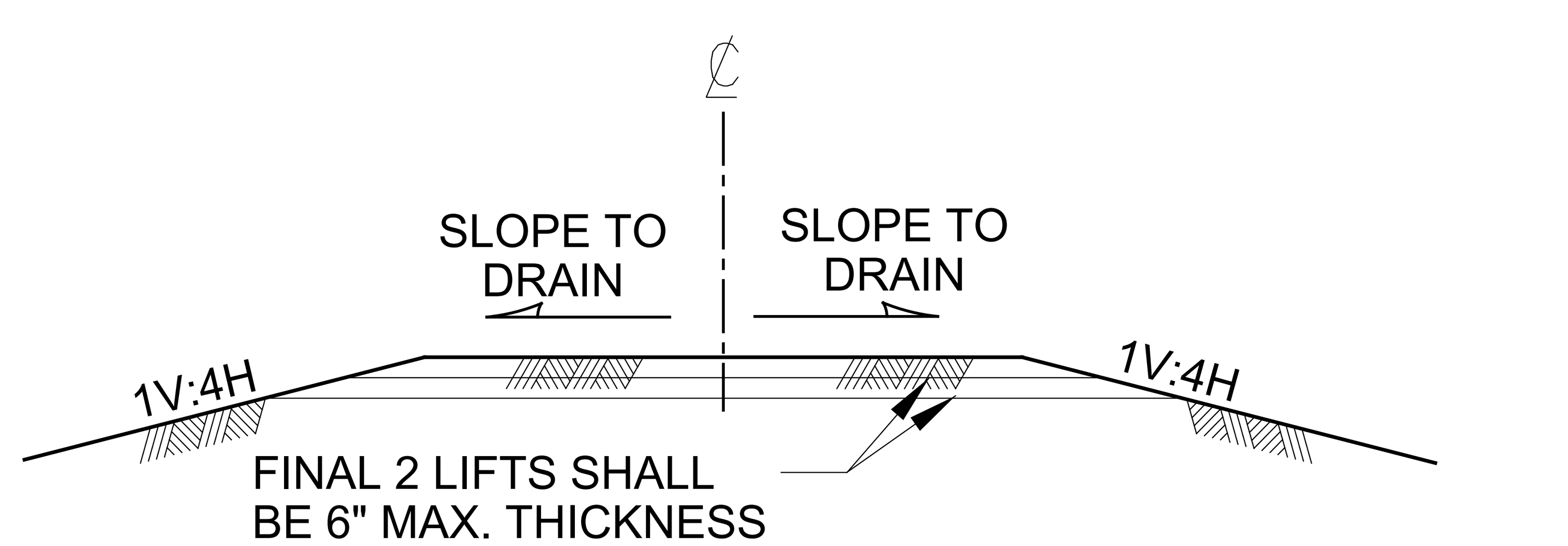
BENCHING DETAIL

NOT TO SCALE

THIS VIEW IS PARALLEL TO CONTROL LINE

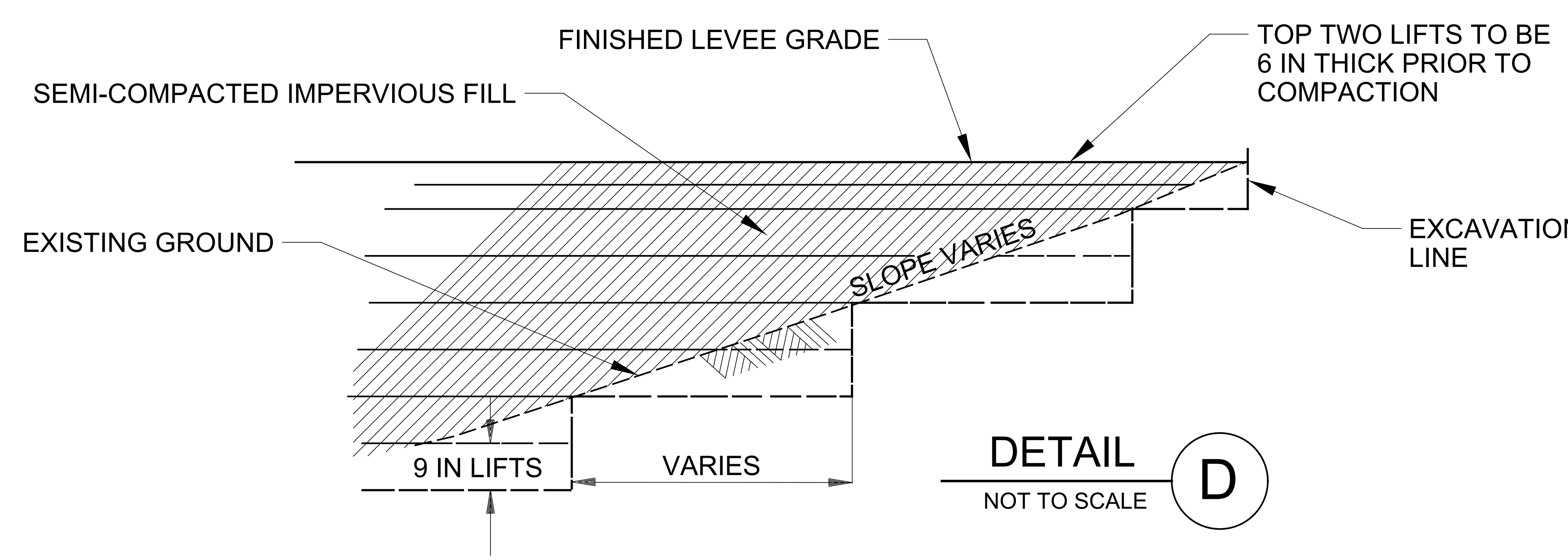
NOTES:

1. BENCHING IS REQUIRED FOR FILL BEING PLACED FROM STA m13 48+63 TO STA m13 49+72 AND STA m14 4+81 TO STA m14 7+20
2. FOR FINAL CROWN DIMENSIONS, SEE CROWN DETAIL 2 ON SHEET C-302.



LEVEE CROWN DETAIL (C)

NOT TO SCALE



DETAIL (D)

NOT TO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

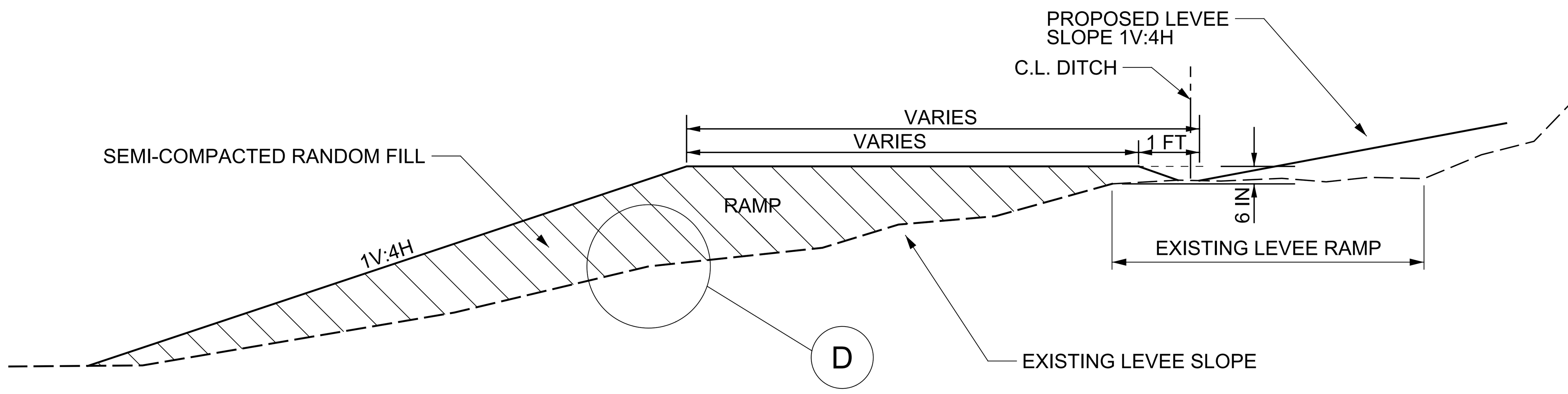
U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 0.2500 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C502
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS
LEVEE BENCHING DETAILS

Sheet ID
C-502

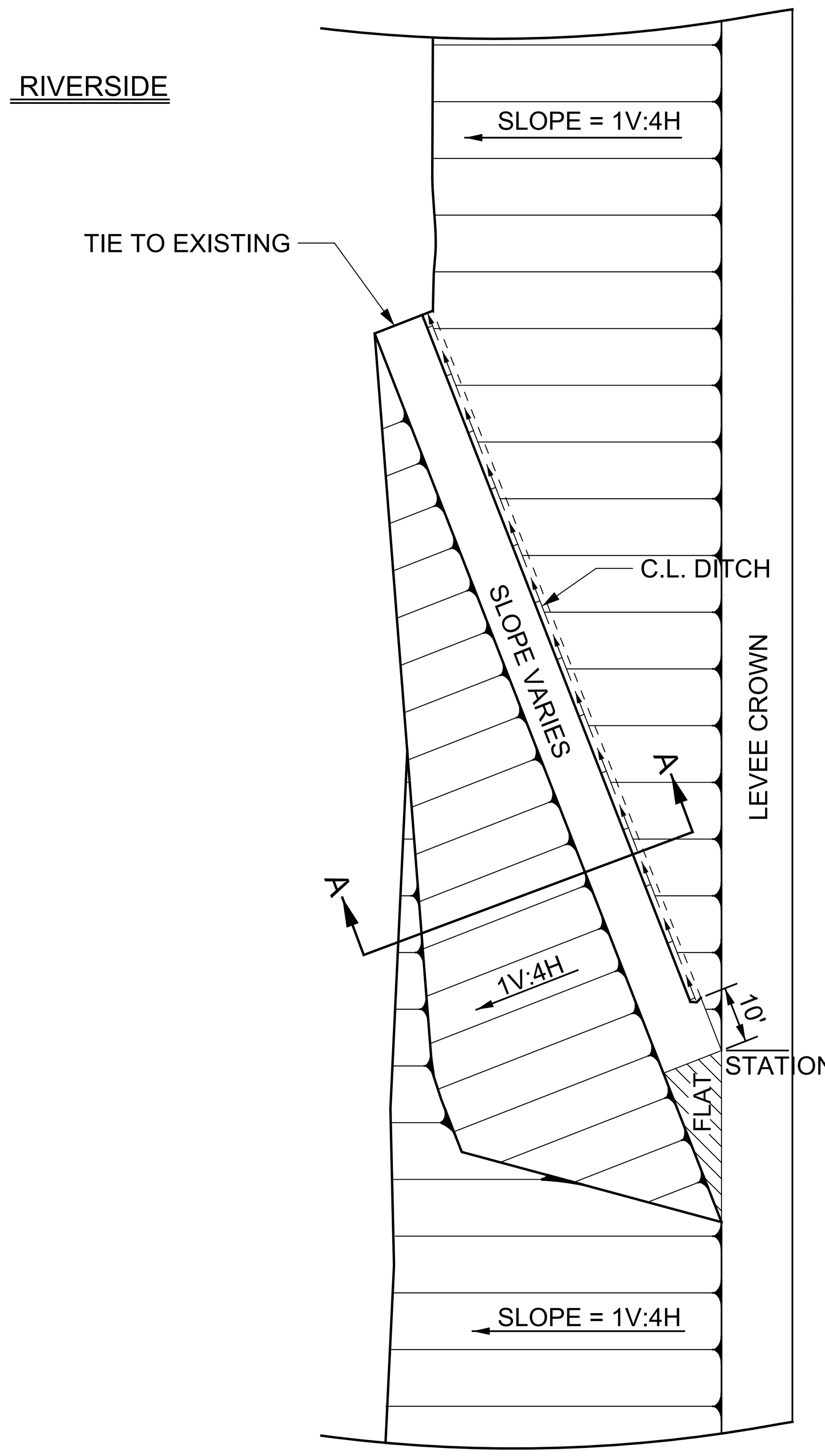
auto_time



SECTION "A" - "A"

TYPICAL RAMP

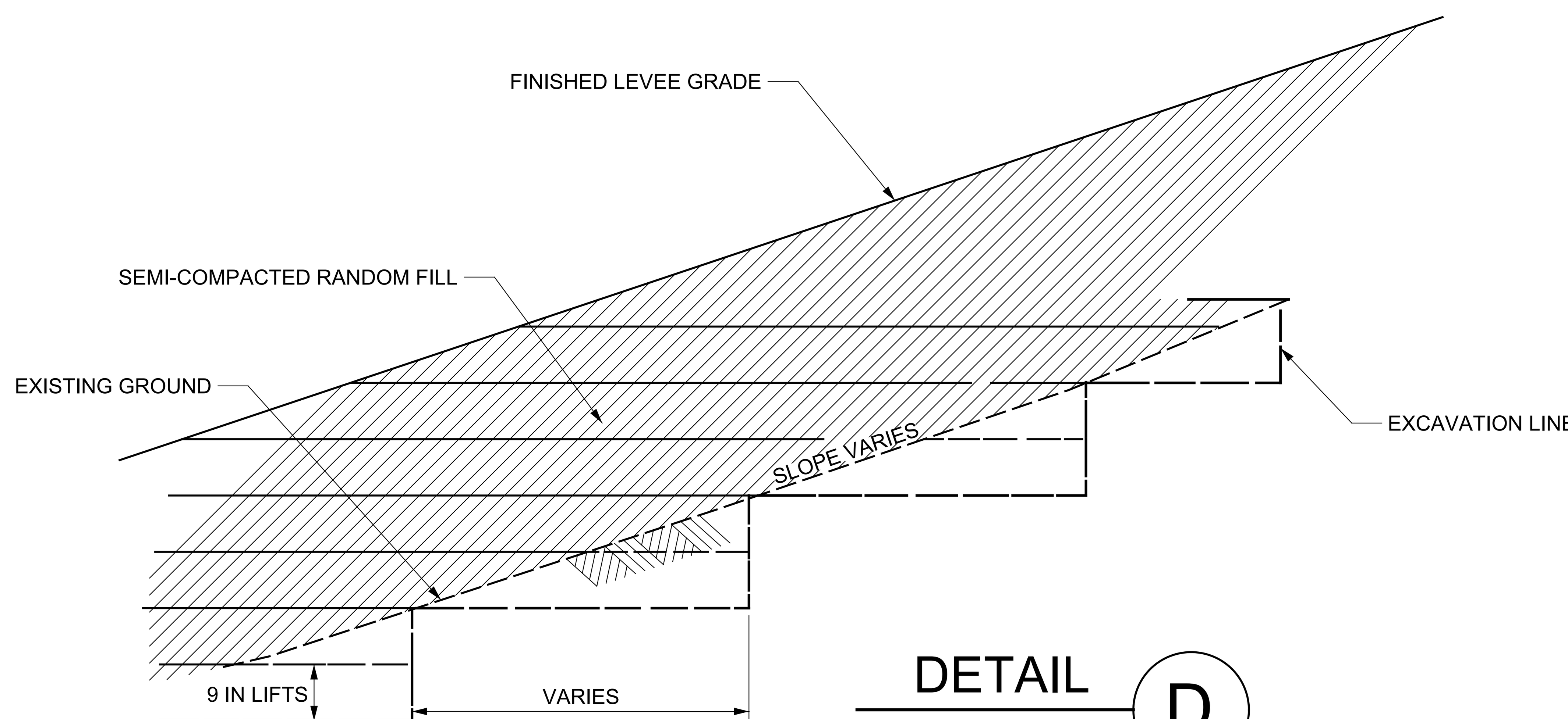
N.T.S.



PLAN

TYPICAL RAMP

N.T.S.



DETAIL D

NOT TO SCALE

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

US Army Corps of Engineers®

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 0.2500 ft / in.
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: C503
DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

CAIRO SLOPE FLATTENING
MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

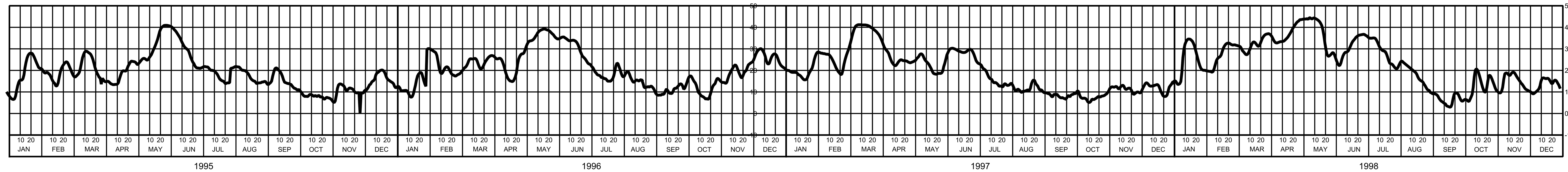
RAMP BENCHING DETAILS

Sheet ID
C-503

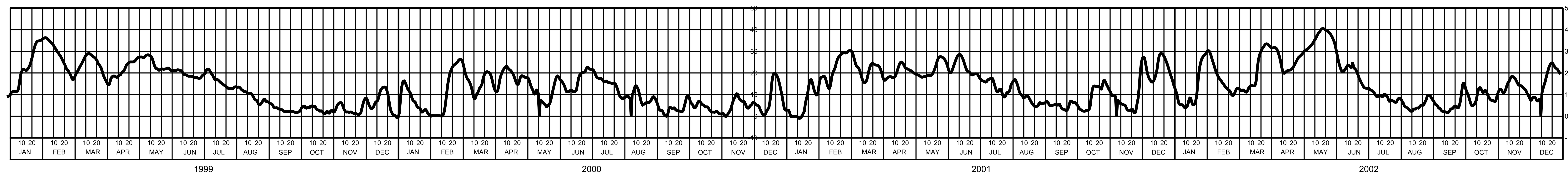
auto_time

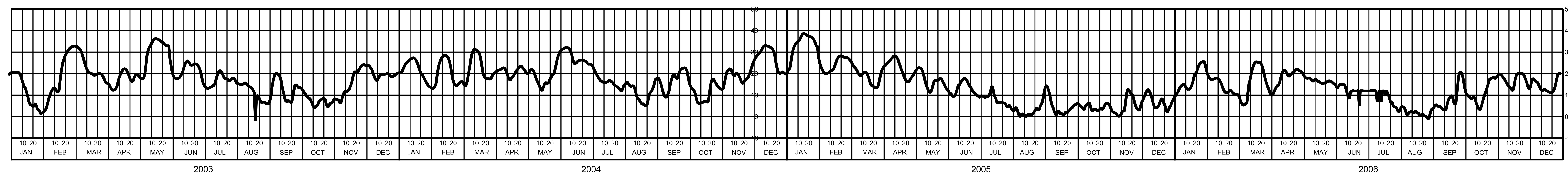
1 2 3 4 5

D



C





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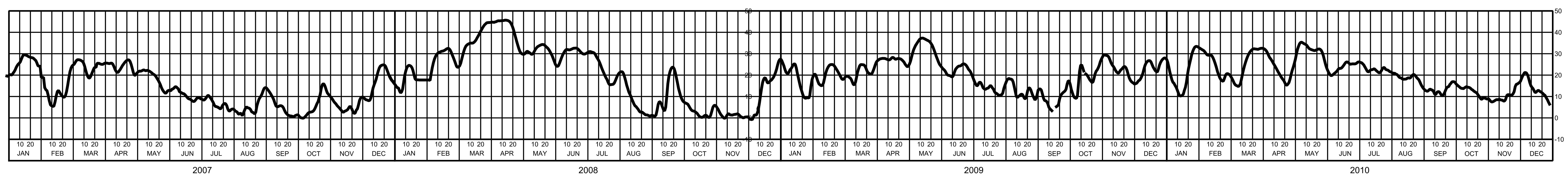
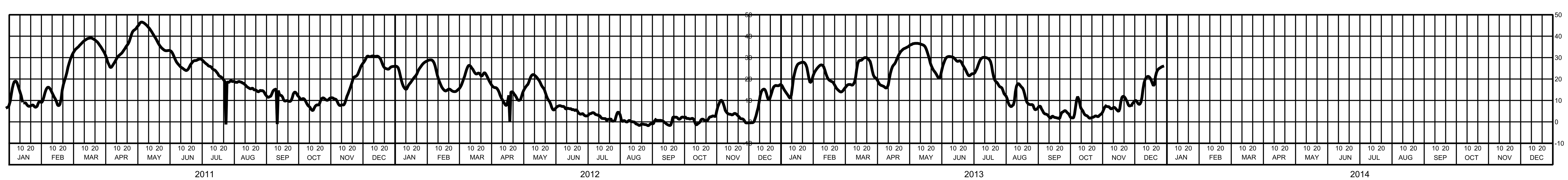


A



STAGE IN FEET - GAGE ZERO, 235.64 NAVD 88

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

DATE: AUGUST 2014
SOLICITATION NO.: W912EQ-14-R-0005
CONTRACT NO.:
FILE NUMBER: MR-P-XX/XXX

DESIGNED BY: JAMIE NABAKOWSKI, P.E.
DWN BY: JDN
CKD BY: DSC
SUBMITTED BY: THOMAS L. MINYARD, P.E.
PLOT SCALE: 29.166667 ' / in
PLOT DATE: 3/28/2014
SIZE: ANSI D
FILE NAME: MississippiHydrosID

U.S. ARMY CORPS OF ENGINEERS
MEMPHIS DISTRICT
MEMPHIS, TENNESSEE

CAIRO SLOPE FLATTENING

MISSISSIPPI RIVER LEVEE - CONSTRUCTION
ALEXANDER COUNTY, ILLINOIS

MISSISSIPPI RIVER HYDROGRAPH
CARUTHERSVILLE, MO GAGE

THIS PROJECT WAS DESIGNED BY THE MEMPHIS DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND PROFESSIONAL DESIGNATIONS OF INDIVIDUALS APPEARS ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER1110-1-8152.

Sheet ID
C-504

auto_time

PA-05-IL-1991-PW-00582(1) P	
Applicant Name:	Application Title:
CAIRO	DDA-043 Road, curb, gutter and sidewalk
Period of Performance Start:	Period of Performance End:
06-07-2011	12-07-2012

Bundle Reference # (Amendment #)	Date Awarded
PA-05-IL-1991-State-0034(34)	05-02-2012

Subgrant Application - FEMA Form 90-91

Note: The Effective Cost Share for this application is 75%

FEDERAL EMERGENCY MANAGEMENT AGENCY PROJECT WORKSHEET				
DISASTER FEMA 1991 - DR -IL	PROJECT NO. DDA-043	PA ID NO. 003-10383-00	DATE 10-31-2011	CATEGORY C
APPLICANT: CAIRO			WORK COMPLETE AS OF: 05-23-2011 : 0 %	
Site 1 of 1				
DAMAGED FACILITY: Road, curb, gutter and sidewalk			COUNTY: Alexander	
LOCATION: PA-05-IL-1991-PW-00582(0): 1 Commercial Avenue (11th St - 12 St)			LATITUDE: 37.00657	LONGITUDE: -89.17869

DAMAGE DESCRIPTION AND DIMENSIONS:

PA-05-IL-1991-PW-00582(0):

The City of Cairo was impacted by severe storms occurring on April 19, 2011 and April 22, 2011 and flooding resulting from those storms beginning on April 19, 2011 and ending on June 14, 2011. Heavy rains falling on already saturated ground caused overland flooding throughout the City of Cairo when floodwaters exceeded the City's' combined storm and sanitary sewer system. Floodwaters submerged multiple city roads, including Commercial Avenue. The amount of water inundating the city's road, septic and sewer systems resulted in sand boils forming – causing the street to collapse between 11th St and 12th St. GPS coordinates listed above (N 37.00657 W -89.17869) were taken at the Cairo Police Station located at 1501 Washington Avenue, Cairo, IL., 62914

SCOPE OF WORK:

PA-05-IL-1991-PW-00582(0):

WORK TO BE COMPLETED: To restore to pre-disaster design, function and capacity the sub grantee will utilized contract services from JT Blankinship & Associates who have prepared an estimate of the work to be completed. Contractor will excavate 5,000 cubic yards (CY) of earth, backfill with 5,000 CY clay, place 1,200 tons of aggregate base courses (12"), remove and replace 230 feet of road curb and gutter and remove and replace 2,300 square feet (SF) of sidewalk. 1,700 SY of oil and chip surface will be restored. The Sub grantee is not claiming Direct Administrative Costs that are directly chargeable to this specific project. The Sub grantee is not requesting any hazard mitigation funding for this project.

PA-05-IL-1991-PW-00582(1):

****** Version 1 ******** This version is being prepared to add the sub-grantee's estimated design and construction engineering costs associated with the current scope of work.

Does the Scope of Work change the pre-disaster conditions at the site? ☐ Yes ☑ No	Special Considerations included? ☑ Yes ☐ No
Hazard Mitigation proposal included? ☐ Yes ☑ No	Is there insurance coverage on this facility? ☐ Yes ☑ No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	0000	Work to be Completed	0/LS	$ 0.00	$ 0.00
2	9001	Contract	1/LS	$ 259,000.00	$ 259,000.00
3	0000	Version 1	0/LS	$ 0.00	$ 0.00
4	3510	Engineering And Design Services	1/LS	$ 48,954.00	$ 48,954.00
				TOTAL COST	$ 307,954.00

PREPARED BY Sarah Wolfe	TITLE Project Specialist	SIGNATURE
APPLICANT REP. Monica Smith	TITLE Special Project Coordinator	SIGNATURE

CITY OF CAIRO

MAYOR TYRONE COLEMAN, 1501 Washington Avenue,
Cairo, Illinois 62914
Phone (618) 734-4127- Fax (618) 734-4129
E-mail: cairo1@lazernetwireless.net

March 30, 2012

Illinois Emergency Management Agency
2200 South Dirksen Parkway
Springfield, Illinois 62703-4528

Attention: Curtis Caldwell

Re: City of Cairo
2011 Flood Damage
FEMA-1991-DR-IL

Dear Mr. Caldwell,

This letter is being written in regards to IEMA's and FEMA's response to the City of Cairo's letter dated March 1, 2012 addressed to IEMA requesting that FEMA funds be approved for engineering work necessary to prepare plans, solicit bids, construction layout and inspection along with any other engineering work required to complete the street/sewer repair projects already approved by FEMA. The following is a list of those four projects including the approved construction estimates.

Project No. DDA-043	$259,000.00
Project No. DDA-044	$ 70,200.00
Project No. DDA-045	$ 34,600.00
Project No. DDA-046	$232,464.00
Total	$596,264.00

FEMA said it would not approve engineering estimates based on percentages used by the USDA Rural Development and that the engineering estimates should be resubmitted showing estimates of actual costs. This has been done for each for the above projects separately and the estimates are shown on the attached sheets. Also, FEMA's response mentioned something about taking care of the engineering costs at project closeout. The City does not agree with this. Since, the City and its Consultant will need to enter into an agreement, we feel that the City must know up front where the engineering funds are coming from. Therefore, the City of Cairo is

requesting that FEMA approve the Engineer's estimates at this time and prepare the necessary paperwork indicating approval of the 75% of funding.

Sincerely,

Monica Smith
Special Project Coordinator
City of Cairo, Illinois

J. T. Blankinship, Inc.
Consulting Engineers and Land Surveyors
401 SOUTH 17th STREET - P.O. BOX 40 - MURPHYSBORO, ILLINOIS 62966
SERVING COMMUNITIES FOR OVER 60 YEARS

WATER AND SEWER IMPROVEMENTS
STREET AND HIGHWAY IMPROVEMENTS
AIRPORTS - EVALUATION SURVEYS - SUBDIVISIONS
TELEPHONE 618-687-1771
FAX 618-687-1773
E-MAIL - jtb1946@frontier.com

Project No. DDA-043 – Commercial Ave. between 11th St. and 12th St.
Street Construction Est. - $259,000.
No sewer estimate

Design Engineering

Three man field party – 44 Hrs. @ $130/Hr. = $5,720
Engineer – 87 Hrs. @ $73/Hr. = $6,351
Registered Prof. Land Surveyor – 17 Hrs. @ $78/Hr. = $1,326
Registered Prof. Engineer – 17 Hrs. @ $88/Hr. = $1,496
Sen. Cadd Tech – 125 Hrs. @ $58/Hr. = $7,250
Cadd Tech – 55 Hrs. @ $48/Hr. = $2,640
Clerical – 35 Hrs. @ $38/Hr. = $1,330
Mileage – 1,250 Mi. @ $0.45/Mi. = $562

Total Design Engineering $26,675

Construction Engineering

Estimated Construction Time – 7 weeks – 37 working days
Three man field party – 18 Hrs. @ $130/Hr. = $2,340
Resident Engineer/Inspector – 37 Days x 8 Hrs. @ $53/Hr. = $15,688
Engineer – 16 Hrs. @ $73/Hr. = $1,168
Clerical – 16 Hrs. @ $38/Hr. = $608
Mileage – 5,500 Mi. @ $0.45/Mi. = $2,475.

Total Construction Engineering $22,279

J. T. Blankinship, Inc.

Consulting Engineers and Land Surveyors

401 SOUTH 17th STREET - P.O. BOX 40 - MURPHYSBORO, ILLINOIS 62966

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TELEPHONE 618-687-1771
FAX 618-687-1773
E-MAIL - jtb1946@frontier.com

JANUARY 1, 2012 SCHEDULE OF HOURLY RATES

PRINCIPAL IN FIRM	$110.00 Per Hour
ASSOCIATE/REGISTERED PROFESSIONAL ENGINEER	$88.00 Per Hour
ENGINEER	$73.00 Per Hour
REGISTERED PROFESSIONAL LAND SURVEYOR	$78.00 Per Hour
LAND SURVEYOR	$58.00 Per Hour
ENGINEERING TECHNICIAN/RESIDENT ENGINEER	$53.00 Per Hour
SR. CADD TECHNICIAN	$58.00 Per Hour
CADD TECHNICIAN	$48.00 Per Hour
SURVEY TECHNICIAN/PARTY CHIEF	$53.00 Per Hour
SURVEY TECHNICIAN	$43.00 Per Hour
SURVEY AIDE	$33.00 Per Hour
MATERIALS TECHNICIAN	$53.00 Per Hour
CERTIFIED WATER AND SEWER OPERATOR	$53.00 Per Hour
CLERICAL	$38.00 Per Hour
TRAVEL	$0.45 Per Mile
TWO (2) MAN FIELD PARTY	$90.00 Per Hour
THREE (3) MAN FIELD PARTY	$130.00 Per Hour

To the amount charged at rates shown, will be added the actual cost of stakes, blueprints, supplies toll calls, transportation and subsistence directly incidental to the performance of service.

Rates are subject to change upon reasonable and proper notice. In any event, this schedule will expire and be superseded by a new schedule on or about January 1, 2013.

Report Generated on:	05/02/2012 16:03
Data Captured As Of:	05/02/2012 16:03
Disaster Number:	1991
Bundle:	PA-05-IL-1991-State-0034

Capture Date: 05/02/2012 16:03

Federal Emergency Management Agency

Project Application Grant Report (P.2)

Disaster: FEMA-1991-DR-IL

Number of Records: 4

Applicant ID: 003-10383-00
Bundle #: PA-05-IL-1991-State-0034
(34)

Applicant: CAIRO

PW #	Cat	Cost Share	Projected Completion Date	Approved PW Amount ($)
PA-05-IL-1991-PW-00585(1)	C	N	12-07-2012	44,037.00

Facility Number: 1
Facility Name: Road repair - 8 sites
Location:

Scope of Work: ****** Version 1 ********
This version is being prepared to add the sub-grantee's estimated design and construction engineering costs associated with the current scope of work.

PW #	Cat	Cost Share	Projected Completion Date	Approved PW Amount ($)
PA-05-IL-1991-PW-00584(1)	F	N	12-07-2012	6,467.00

Facility Number: 1
Facility Name: Storm/septic system repairs
Location:

Scope of Work: ****** Version 1 ********
This version is being prepared to add the sub-grantee's estimated design and construction engineering costs associated with the current scope of work.

PW #	Cat	Cost Share	Projected Completion Date	Approved PW Amount ($)
PA-05-IL-1991-PW-00583(1)	C	N	12-07-2012	13,655.00

Facility Number: 1
Facility Name: Road, curb and gutter repairs
Location:

Scope of Work: ****** Version 1 ********
This version is being prepared to add the sub-grantee's estimated design and construction engineering costs associated with the current scope of work.

PW #	Cat	Cost Share	Projected Completion Date	Approved PW Amount ($)
PA-05-IL-1991-PW-00582(1)	C	N	12-07-2012	48,954.00

Facility Number: 1
Facility Name: Road, curb, gutter and sidewalk
Location:

Scope of Work: ****** Version 1 ********
This version is being prepared to add the sub-grantee's estimated design and construction engineering costs associated with the current scope of work.

4 PWs	PWs ($)	Subgrantee Admin Exp. ($)	Total ($)
	113,113.00	0.00	113,113.00

Amount Eligible ($)			
Federal Share ($)	84,834.75	0.00	84,834.75

PA-05-IL-1991-PW-00582(0) P	
Applicant Name:	Application Title:
CAIRO	DDA-043 Road, curb, gutter and sidewalk
Period of Performance Start:	Period of Performance End:
06-07-2011	12-07-2012

Bundle Reference # (Amendment #)	Date Awarded
PA-05-IL-1991-State-0030(30)	12-22-2011

Subgrant Application - FEMA Form 90-91

Note: The Effective Cost Share for this application is 75%

FEDERAL EMERGENCY MANAGEMENT AGENCY
PROJECT WORKSHEET

DISASTER	PROJECT NO.	PA ID NO.	DATE	CATEGORY
FEMA 1991 - DR -IL	DDA-043	003-10383-00	10-31-2011	C

APPLICANT: CAIRO	WORK COMPLETE AS OF: 05-23-2011 : 0 %

Site 1 of 1

DAMAGED FACILITY:	COUNTY: Alexander
Road, curb, gutter and sidewalk	

LOCATION:	LATITUDE:	LONGITUDE:
PA-05-IL-1991-PW-00582(0): 1 Commercial Avenue (11th St - 12 St)	37.00657	-89.17869

DAMAGE DESCRIPTION AND DIMENSIONS:

PA-05-IL-1991-PW-00582(0):

The City of Cairo was impacted by severe storms occurring on April 19, 2011 and April 22, 2011 and flooding resulting from those storms beginning on April 19, 2011 and ending on June 14, 2011. Heavy rains falling on already saturated ground caused overland flooding throughout the City of Cairo when floodwaters exceeded the City's' combined storm and sanitary sewer system. Floodwaters submerged multiple city roads, including Commercial Avenue. The amount of water inundating the city's road, septic and sewer systems resulted in sand boils forming – causing the street to collapse between 11th St and 12th St. GPS coordinates listed above (N 37.00657 W -89.17869) were taken at the Cairo Police Station located at 1501 Washington Avenue, Cairo, IL., 62914

SCOPE OF WORK:

PA-05-IL-1991-PW-00582(0):

WORK TO BE COMPLETED: To restore to pre-disaster design, function and capacity the sub grantee will utilized contract services from JT Blankinship & Associates who have prepared an estimate of the work to be completed. Contractor will excavate 5,000 cubic yards (CY) of earth, backfill with 5,000 CY clay, place 1,200 tons of aggregate base courses (12"), remove and replace 230 feet of road curb and gutter and remove and replace 2,300 square feet (SF) of sidewalk. 1,700 SY of oil and chip surface will be restored. The Sub grantee is not claiming Direct Administrative Costs that are directly chargeable to this specific project. The Sub grantee is not requesting any hazard mitigation funding for this project.

Does the Scope of Work change the pre-disaster conditions at the site? ☐ Yes ☑ No	Special Considerations included? ☑ Yes ☐ No
Hazard Mitigation proposal included? ☐ Yes ☑ No	Is there insurance coverage on this facility? ☐ Yes ☑ No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	0000	Work to be Completed	0/LS	$ 0.00	$ 0.00
2	9001	Contract	1/LS	$ 259,000.00	$ 259,000.00
				TOTAL COST	$ 259,000.00

PREPARED BY Sarah Wolfe	TITLE Project Specialist	SIGNATURE
APPLICANT REP. Monica Smith	TITLE Special Project Coordinator	SIGNATURE

PA-05-IL-1991-PW-00582(0) P	
Applicant Name:	Application Title:
CAIRO	DDA-043 Road, curb, gutter and sidewalk
Period of Performance Start:	Period of Performance End:
06-07-2011	12-07-2012

Subgrant Application - Entire Application

Application Title: DDA-043 Road, curb, gutter and sidewalk
Application Number: PA-05-IL-1991-PW-00582(0)
Application Type: Subgrant Application (PW)

Preparer Information

Prefix	
First Name	Sarah
Middle Initial	
Last Name	Wolfe
Title	Project Specialist
Agency/Organization Name	FEMA
Address 1	536 South Clark Street, 6th Floor
Address 2	
City	Chicago
State	IL
Zip	60605
Email	curtis.caldwell@illinois.gov 217-785-9926

Is the application preparer the Point of Contact? No

Point of Contact Information

Prefix	
First Name	Monica Smith 618-734-1840
Middle Initial	
Last Name	Smith
Title	Special Project Coordinator
Agency/Organization	City of Cario Illinois
Address 1	1501 Washington Avenue
Address 2	
City	Cairo
State	IL

ZIP	62914
Phone	618-734-4127
Fax	618-734-4129
Email	cplibary@lazernetwireless.net

Alternate Point of Contact Information

Prefix	
First Name	
Middle Initial	
Last Name	
Title	
Agency/Organization	
Address 1	
Address 2	
City	
State	
ZIP	
Phone	
Fax	
Email	

Project Description

Disaster Number:	1991
Pre-Application Number:	PA-05-IL-1991-RPA-0088
Applicant ID:	003-10383-00
Applicant Name:	CAIRO
Subdivision:	
Project Number:	DDA-043
Standard Project Number/Title:	399 - Road System Damage
Please Indicate the Project Type:	Neither Alternate nor Improved
Application Title:	DDA-043 Road, curb, gutter and sidewalk
Category:	C.ROADS & BRIDGES
Percentage Work Completed?	0.0 %
As of Date:	05-23-2011
Comments	

Attachments

Damage Facilities (Part 1 of 2)

Facility Number	Facility Name	Address	County	City	State	ZIP	Site Previously Damaged?	Action

1	Road, curb, gutter and sidewalk	Alexander	IL	No

Comments

***The Subgrantee is not claiming Direct Administrative Costs associated with this Project Worksheet in accordance with PA Policy 9525.9. *** In the case of a change in the scope of work, the applicant should immediately notify Curtis Caldwell (217) 782-8719 State Group Supervisor, IEMA Mitigation and Infrastructure section. *** As described in 44 CFR 13.42 (2) (b), 3(c), sub-grantee must maintain all work-related records for a period of three (3) years from Sub-grantee closure and final payment. All records relative to this project worksheet are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster specific costs. *** This is a large project. All costs associated with this project must be substantiated. Complete documentation must be furnished by the applicant through the Governor's Authorized Representative (GAR) when all work is complete by way of a written request for final inspection and review. ***Federal funding is contingent upon acquiring all necessary federal, state and local permits. Noncompliance with this requirement may jeopardize the receipt of federal funds. It is the responsibility of the applicant to obtain all required permits prior to the commencement of work.

Attachments

User	Date	Document Type	Description	Hard Copy File Reference	File Name	Action
CATHRYN BRACKEMYER	12-01-2011	Map	Location Map		DDA-043 Location Map.pdf (103.85 kb)	View
CATHRYN BRACKEMYER	12-01-2011	Photos	Photo Pages		DDA-043 Photo Pages.pdf (127.06 kb)	View

Facility Name:	Road, curb, gutter and sidewalk
Address 1:	
Address 2:	
County:	Alexander
City:	
State:	IL
ZIP:	
Was this site previously damaged?	No
Location:	PA-05-IL-1991-PW-00582(0): 1 Commercial Avenue (11th St - 12 St)
Damage Description and Dimensions:	PA-05-IL-1991-PW-00582(0): The City of Cairo was impacted by severe storms occurring on April 19, 2011 and April 22, 2011 and flooding resulting from those storms beginning on April 19, 2011 and ending on June 14, 2011. Heavy rains falling on already saturated ground caused overland flooding throughout the City of Cairo when floodwaters exceeded the City's' combined storm and sanitary sewer system. Floodwaters submerged multiple city roads, including Commercial Avenue. The amount of water inundating the city's road, septic and sewer systems resulted in sand boils forming – causing the street to collapse between 11th St and 12th St.

GPS coordinates listed above (N 37.00657 W -89.17869) were taken at the Cairo Police Station located at 1501 Washington Avenue, Cairo, IL., 62914

PA-05-IL-1991-PW-00582(0):
WORK TO BE COMPLETED:
To restore to pre-disaster design, function and capacity the sub grantee will utilized contract services from JT Blankinship & Associates who have prepared an estimate of the work to be completed. Contractor will excavate 5,000 cubic yards (CY) of earth, backfill with 5,000 CY clay, place 1,200 tons of aggregate base courses (12"), remove and replace 230 feet of road curb and gutter and remove and replace 2,300 square feet (SF) of sidewalk. 1,700 SY of oil and chip surface will be restored.

Scope of Work:

The Sub grantee is not claiming Direct Administrative Costs that are directly chargeable to this specific project.

The Sub grantee is not requesting any hazard mitigation funding for this project.

GIS Coordinates

Project Location	Latitude	Longitude
Cairo Police Station, 1501 Washington Avenue, Cairo, IL., 62914	37.00657	-89.17869

Special Considerations

1. Does the damaged facility or item of work have insurance coverage and/or is it an insurable risk (e.g., buildings, equipment, vehicles, etc)?	No
2. Is the damaged facility located within a floodplain or coastal high hazard area and/or does it have an impact on a floodplain or wetland?	Yes
3. Is the damaged facility or item of work located within or adjacent to a Coastal Barrier Resource System Unit or an Otherwise Protected Area?	No
4. Will the proposed facility repairs/reconstruction change the pre-disaster conditions (e.g., footprint, material, location, capacity, use of function)?	No
5. Does the applicant have a hazard mitigation proposal or would the applicant like technical assistance for a hazard mitigation proposal?	No
6. Is the damaged facility on the National Register of Historic Places or the state historic listing? Is it older than 50 years? Are there more, similar buildings near the site?	No
7. Are there any pristine or undisturbed areas on, or near, the project site? Are there large tracts of forestland?	No
8. Are there any hazardous materials at or adjacent to the damaged facility and/or item of work?	No
9. Are there any other environmental or controversial issues associated with the damaged facility and/or item of work?	No

Attachments

For Category C, D, E, F, and G Projects only

Is effective mitigation feasible on this project? No

If you answered **Yes** to the above question, the next question is required

Will mitigation be performed on any sites in this project?

If you answered **Yes** to the above question, the next question is required

Do you wish to attach a Hazard Mitigation Proposal?

If you answered **Yes** to the above question, the next two questions are required

Please provide the Scope of Work for the estimate:

Would you like to add the Hazard Mitigation Proposal as a cost line item to the project cost?

Comments

Attachments

Cost Estimate

Is this Project Worksheet for

(Preferred) Repair

Sequence	Code	Material and/or Description	Unit Quantity	Unit of Measure	Unit Price	Subgrant Budget Class	Cost Estimate	Action
1	0000	**Work to be Completed**						
2	9001	Contract	1	LS	$ 259,000.00	CONTRACTUAL	$ 259,000.00	
						Total Cost:	**$ 259,000.00**	

Insurance Adjustments (Deductibles, Proceeds and Settlements)

Sequence	Code	Material and/or Description	Unit Quantity	Unit of Measure	Unit Price	Subgrant Budget Class	Cost Estimate	Action
						Total Cost:	**$ 0.00**	

Total Cost Estimate: **$ 259,000.00**
(Preferred Estimate Type + Insurance Adjustments)
Awarded cost line items: $ 259,000.00
Remaining cost line items: $ 0.00

Comments

Attachments

Existing Insurance Information

Insurance Type	Policy No.	Bldg/Property Amount	Content Amount	Insurance Amount	Deductible Amount	Years Required

Comments

Attachments

Comments and Attachments

Name of Section	Comment	Attachment
Damage Facilities	***The Subgrantee is not claiming Direct Administrative Costs associated with this Project Worksheet in accordance with PA Policy 9525.9. *** In the case of a change in the scope of work, the applicant should immediately notify Curtis Caldwell (217) 782-8719 State Group Supervisor, IEMA Mitigation and Infrastructure section. *** As described in 44 CFR 13.42 (2) (b), 3(c), sub-grantee must maintain all work-related records for a period of three (3) years from Sub-grantee closure and final payment. All records relative to this project worksheet are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster specific costs. *** This is a large project. All costs associated with this project must be substantiated. Complete documentation must be furnished by the applicant through the Governor's Authorized Representative (GAR) when all work is complete by way of a written request for final inspection and review. ***Federal funding is contingent upon acquiring all necessary federal, state and local permits. Noncompliance with this requirement may jeopardize the receipt of federal funds. It is the responsibility of the applicant to obtain all required permits prior to the commencement of work.	DDA-043 Location Map.pdf DDA-043 Photo Pages.pdf

Bundle Reference # (Amendment #)	Date Awarded
PA-05-IL-1991-State-0030(30)	12-22-2011

Subgrant Application - FEMA Form 90-91

Note: The Effective Cost Share for this application is 75%

FEDERAL EMERGENCY MANAGEMENT AGENCY **PROJECT WORKSHEET**				
DISASTER FEMA 1991 - DR -IL	PROJECT NO. DDA-043	PA ID NO. 003-10383-00	DATE 10-31-2011	CATEGORY C
APPLICANT: CAIRO			WORK COMPLETE AS OF: 05-23-2011 : 0 %	
Site 1 of 1				
DAMAGED FACILITY: Road, curb, gutter and sidewalk			COUNTY: Alexander	
LOCATION: PA-05-IL-1991-PW-00582(0): 1 Commercial Avenue (11th St - 12 St)			LATITUDE: 37.00657	LONGITUDE: -89.17869
DAMAGE DESCRIPTION AND DIMENSIONS: PA-05-IL-1991-PW-00582(0): The City of Cairo was impacted by severe storms occurring on April 19, 2011 and April 22, 2011 and flooding resulting from those storms beginning on April 19, 2011 and ending on June 14, 2011. Heavy rains falling on already saturated ground caused overland flooding				

throughout the City of Cairo when floodwaters exceeded the City's' combined storm and sanitary sewer system. Floodwaters submerged multiple city roads, including Commercial Avenue. The amount of water inundating the city's road, septic and sewer systems resulted in sand boils forming – causing the street to collapse between 11th St and 12th St. GPS coordinates listed above (N 37.00657 W -89.17869) were taken at the Cairo Police Station located at 1501 Washington Avenue, Cairo, IL., 62914

SCOPE OF WORK:

PA-05-IL-1991-PW-00582(0):

WORK TO BE COMPLETED: To restore to pre-disaster design, function and capacity the sub grantee will utilized contract services from JT Blankinship & Associates who have prepared an estimate of the work to be completed. Contractor will excavate 5,000 cubic yards (CY) of earth, backfill with 5,000 CY clay, place 1,200 tons of aggregate base courses (12"), remove and replace 230 feet of road curb and gutter and remove and replace 2,300 square feet (SF) of sidewalk. 1,700 SY of oil and chip surface will be restored. The Sub grantee is not claiming Direct Administrative Costs that are directly chargeable to this specific project. The Sub grantee is not requesting any hazard mitigation funding for this project.

Does the Scope of Work change the pre-disaster conditions at the site? ☐ Yes ☑ No	Special Considerations Included? ☑ Yes ☐ No
Hazard Mitigation proposal included? ☐ Yes ☑ No	Is there insurance coverage on this facility? ☐ Yes ☑ No

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY/UNIT	UNIT PRICE	COST
1	0000	Work to be Completed	0/LS	$ 0.00	$ 0.00
2	9001	Contract	1/LS	$ 259,000.00	$ 259,000.00
				TOTAL COST	$ 259,000.00

PREPARED BY Sarah Wolfe	TITLE Project Specialist	SIGNATURE
APPLICANT REP. Monica Smith	TITLE Special Project Coordinator	SIGNATURE

CAIRO : PA-05-IL-1991-PW-00582

Conditions Information

Review Name	Condition Type	Condition Name	Description	Monitored	Status
Final Review	Other (EHP)	Standard Condition #2	This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.	No	Approved
Final Review	Other (EHP)	Standard Condition #1	Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.	No	Approved
			If ground disturbing activities occur during construction,		

Final Review	Other (EHP)	Standard Condition #3	applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.	No	Approved
EHP Review	Other (EHP)	Standard Condition #2	This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.	No	Recommended
EHP Review	Other (EHP)	Standard Condition #1	Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.	No	Recommended
EHP Review	Other (EHP)	Standard Condition #3	If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.	No	Recommended

Internal Comments				
No.	Queue	User	Date/Time	Reviewer Comments
4	Award Review	SYSTEM	12-22-2011 04:49 PM GMT	ACCEPTED
3	Final Review	WOLFE SARAH	12-19-2011 09:27 PM GMT	Back-up documentation to be added to file. - sew 12/19/11
2	EHP Review	RATLIFF AMANDA	12-19-2011 07:13 PM GMT	Per Flood Insurance Rate Map (FIRM) panel 17003C0220E, dated 05/04/2009, the project is located in Zone X, the 100-year floodplain. Project is road repair, which is not likely to affect floodplain values. - kpoulson - 12/15/2011 21:12:03 GMT Activity meets Programmatic Allowance of the Programmatic Agreement among FEMA, IHPA, IEMA and ACHP executed March 13, 2011 - Programmatic Allowances III.A and III.E—Roads and Roadways. - kpoulson - 12/15/2011 21:08:59 GMT
1	Initial Review	RIVERA JOSE	12-15-2011 02:52 PM GMT	Awaiting for backup info.

FEMA Form 90-91, DEC 08

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY

PROJECT WORKSHEET

582

PAPERWORK BURDEN DISCLOSURE NOTICE

DECLARATION NO.	PW REF NO.	DATE	FIPS NO.	CATEGORY	EMMIE NO.
FEMA 1991 DR IL	DDA-043	10/31/11	003-10383-00	C	

APPLICANT	WORK COMPLETED AS OF: DATE:	PERCENT:
City of Cairo	05/23/11	0%
DAMAGED FACILITY	COUNTY	
Road, curb, gutter and sidewalk	Alexander	
LOCATION	LATITUDE	LONGITUDE
1 Commercial Ave (11th st - 12th st)	N 37.00657	W -89.17869

Was this site previously damaged? ☐ Yes ☒ No ☐ Unsure

DAMAGE DESCRIPTION AND DIMENSIONS:

The City of Cairo was impacted by severe storms occurring on April 19, 2011 and April 22, 2011 and flooding resulting from those storms beginning on April 19, 2011 and ending on June 14, 2011. Heavy rains falling on already saturated ground caused overland flooding throughout the City of Cairo when floodwaters exceeded the City's' combined storm and sanitary sewer system. Floodwaters submerged multiple city roads, including Commercial Avenue. The amount of water inundating the city's road, septic and sewer systems resulted in sand boils forming - causing the street to collapse between 11th St and 12th St.

GPS coordinates listed above (N 37.00657 W -89.17869) were taken at the Cairo Police Station located at 1501 Washington Avenue, Cairo, IL., 62914

SCOPE OF WORK:

Fund at 75%

WORK TO BE COMPLETED:

To restore to pre-disaster design, function and capacity the sub grantee will utilized contract services from JT Blankinship & Associates who have prepared an estimate of the work to be completed. Contractor will excavate 5,000 cubic yards (CY) of earth, backfill with 5,000 CY clay, place 1,200 tons of aggregate base course (12"), remove and replace 230 feet of road curb and gutter and remove and replace 2,300 square feet (SF) of sidewalk. 1,700 SY of oil and chip surface will be restored.

The Sub grantee is not claiming Direct Administrative Costs that are directly chargeable to this specific project.
The Sub grante is not requesting any hazard mitigation funding for this project.

PROJECT COST

ITEM	CODE	NARRATIVE	QUANTITY	UNIT	UNIT PRICE	COST
1	0000	WORK TO BE COMPLETED				$ -
2	9001	Contracts	1	LS	$ 259,000.00	$ 259,000.00
						$ -
						$ -
						$ -
						$ -
						$ -
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						$ -
		SUBTOTAL FROM COST CONTINUATION PAGE(S)				$ -
					TOTAL PROJECT COST	$ 259,000.00

PREPARED BY: S Wolfe	TITLE: PA Project Specialist		
FEMA PAC CREW LEADER: 0	STATE PAC CREW LEADER: 0		
APPLICANT: Monica Smith	DATE:	PHONE:	618-734-1840

FEMA Form 90-120

FEDERAL EMERGENCY MANAGEMENT AGENCY

SPECIAL CONSIDERATIONS

DISASTER		APPLICANT NAME	PW REF NO.	FIPS NO.	DATE
1991	IL	City of Cairo	DDA-043	003-10383-00	10/31/11

1. Does the damaged facility or item of work have insurance and/or is it an insurable risk? *(e.g., buildings, equipment, vehicles, etc.)*

☐ Yes ☒ No ☐ Unsure

2. Is the damaged facility located within a floodplain or coastal high hazard area, or does it have an impact on a floodplain or wetland?

☒ Yes ☐ No ☐ Unsure

3. Is the damaged facility or item of work located within or adjacent to a Coastal Barrier Resource System Unit or an Otherwise Protected Area?

☐ Yes ☒ No ☐ Unsure

4. Will the proposed facility repairs/reconstruction change the pre-disaster condition? *(e.g., footprint, material, location, capacity, use or function)*

☐ Yes ☒ No ☐ Unsure

5. Does the applicant have a hazard mitigation proposal or would the applicant like technical assistance for a hazard proposal?

☐ Yes ☒ No ☐ Unsure

6. Is the damaged facility on the National Register of Historic Places or the state historic listing? Is it older than 50 years? Are there more, similar buildings near the site?

☐ Yes ☒ No ☐ Unsure

Facility Constructed In:

7. Are there any pristine or undisturbed areas on, or near, the project site? Are there large tracts of forestland?

☐ Yes ☒ No ☐ Unsure

8. Are there any hazardous materials at or adjacent to the damaged facility and/or item of work?

☐ Yes ☒ No ☐ Unsure

9. Are there any other environmentally or controversial issues associated with the damaged facility and/or item of work?

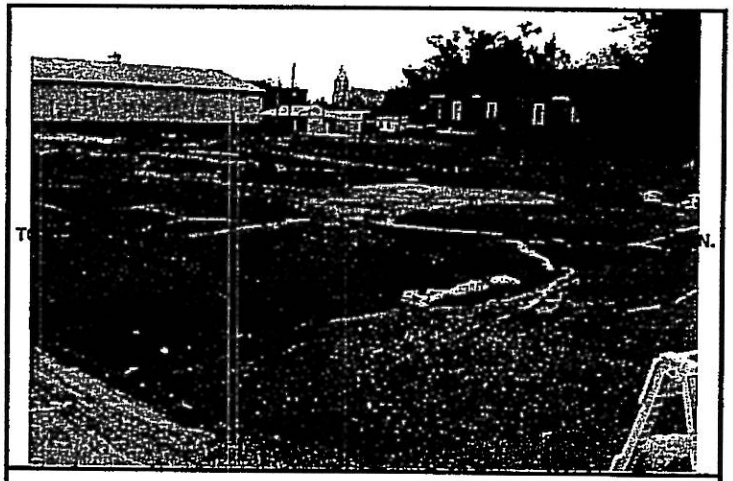
☐ Yes ☒ No ☐ Unsure

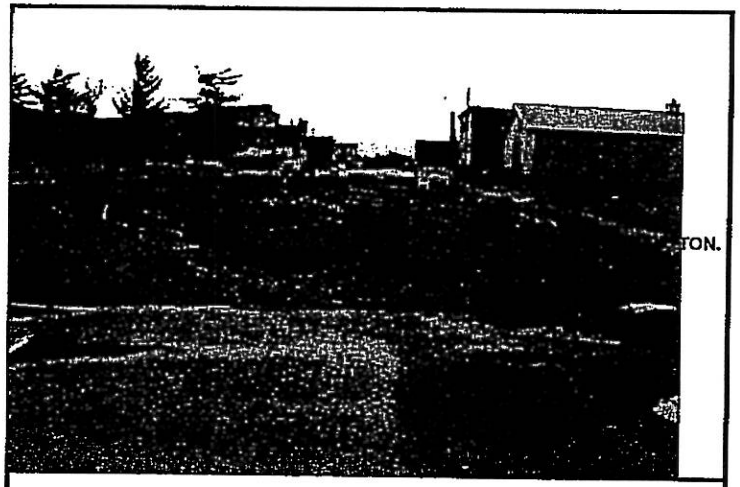
PREPARED BY:	S Wolfe

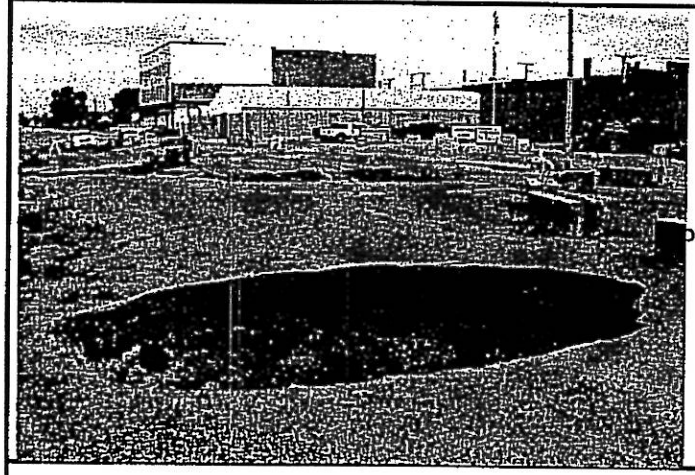
FEDERAL EMERGENCY MANAGEMENT AGENCY

PHOTO SHEET

APPLICANT:	City of Cairo	CATEGORY:	C
FIPS NO.	003-10383-00	PW REF NO.	DDA-043







TO INSERT PICTURE, SELECT THIS BOX AND CLICK "INSERT PICTURE" BUTTON.

Google

Address 1101-1199 Commerce Ave
Cairo, IL 62914